NEBRASKA INFORMATION TECHNOLOGY COMMISSION
Tuesday, March 15, 2005, 1:00 p.m.
Executive Building, 521 South 14th Street
5th Floor-Conference Room
Lincoln, Nebraska
AGENDA

Meeting Documents:
Click the links in the agenda or click here for all documents (x.x MB, xx Pages)

1:00 p.m. Special Comments - Governor Dave Heineman

1:15 p.m. Call to Order, Notice of Meeting and Roll Call – Lt. Governor Sheehy

1:20 p.m. **Approval of November 10, 2004 Minutes*** – Lt. Governor Sheehy

1:25 p.m. Public Comment

1:30 p.m. Strategic Initiatives (Status Update Only | Full Text)

A. Network Nebraska
B. Nebraska Telehealth Network
C. Statewide Synchronous Video Network
D. Community IT Planning and Development
E. Nebraska e-Learning
F. Enterprise Architecture
G. E-Government
H. Security and Business Resumption

2:00 p.m. Statewide Technology Plan

2:05 p.m. Legislative Update

2:20 p.m. Report from the Councils, Technical Panel and Staff
- A. Community Council Report
  - **1. Membership Changes***
- B. Education Council Report
  - 1. Membership
- C. State Government Council Report
- D. Technical Panel Report
  - **1. FY 2005-2007 I.T. Budget Request: Workers Compensation Court (Summary Sheet | Revised Project Proposal)***
  - **2. Standards & Guidelines:**
    - **a. Lotus Notes Standards for State Government Agencies***
    - **b. Lotus Notes Guidelines for State Government Agencies***
    - **c. Identity and Access Management Standard for State Government Agencies***
  - 3. White Paper: "Converting distance learning networks to a high bandwidth flexible infrastructure"

3:00 p.m. New Business

3:15 p.m. Adjournment
(Next Meeting Date: June 14, 2005)

(Bolded * indicates action items.)

Meeting notice and agenda was posted to the NITC and Public Meeting Calendar Websites on March 9, 2005.

NEBRASKA INFORMATION TECHNOLOGY COMMISSION

Wednesday, November 10, 2004, 1:00 pm
Nebraska Educational Television
1800 North 33rd Street, Lincoln, Nebraska
PROPOSED MINUTES

MEMBERS PRESENT:

Lieutenant Governor Dave Heineman, Chair
Linda Aerni, Chief Executive Officer, Community Internet Systems
Dr. Eric Brown, Manager, KRVN Radio
L. Merill Bryan, Senior Vice President & Chief Information Officer, Union Pacific
Dr. Doug Christensen, Commissioner, Nebraska Department of Education
Susan C. Heider, Chief Information Officer, Regional West Medical Center
Trev Peterson, Attorney, Knudsen, Berkheimer, Richardson, and Endacott, LLP
Dr. Dennis Smith, University of Nebraska

MEMBERS ABSENT: Greg Adams, Mayor, City of York

CALL TO ORDER, ROLL CALL AND MEETING NOTICE

Lieutenant Governor Heineman called the meeting to order at 1:00 p.m. There were seven members present at the time of roll call. A quorum existed to conduct official business. It was stated that the meeting notice was posted to the NITC Web site on Monday, October 4, 2004 and on the Public Calendar Web site on Tuesday, November 2, 2004. The meeting agenda was posted to the NITC and Public Meeting Calendar Web sites on Wednesday, November 3, 2004.

APPROVAL OF SEPTEMBER MINUTES

Commissioner Peterson moved to approve the September 9, 2004 minutes as presented. Commissioner Smith seconded the motion. Roll call vote: Aerni-Yes, Bryan-Yes, Christensen-Yes, Heider-Yes, Heineman-Yes, Peterson-Yes, and Smith-Yes. Results: 7-Yes, 0-No. The motion was carried by unanimous vote.

PUBLIC COMMENT

There were no comments from the public.

Lieutenant Governor Heineman informed the Commissioners that the March, November and June 2005 meeting dates have not been determined. Staff will be in contact regarding more proposed dates. The September meeting date has been set for Friday, September 16, 2005 at which time there will be a joint meeting with the Education Council.

Commissioner Brown arrived at 1:07 p.m.

NITC PRIORITIZATION OF FY 2005-07 IT BUDGET REQUESTS

Lieutenant Governor Heineman referred to the lists of projects as ranked by the Education Council and State Government Council. He explained that the ranking by the State Government Council is based on the technical reviews, only, and was not necessarily reflective of the state's priorities or goals. Lieutenant Governor Heineman also discussed the current budget picture. Although there has been an increase in the state's revenue, much of this will be consumed by state aid to education, special education, Medicaid, without any additional funds for, University of Nebraska requests, salary requests, other agency needs and budget deficit requests. Despite the improvement in revenues, the state is still facing a very tight budget, and the NITC should take that into consideration as it develops it recommendations to the Governor and Legislature.

Agency representatives were present for questions and/or comments regarding their IT budget requests.

Supreme Court: Frank Goodroe, State Court Administrator
JUSTICE is an automated computer system funded annually through cash funds at approximately $3 million. The system is in all district and county courts with the exception of Douglas County District Court. The JUSTICE system is not presently used in any of the three separate juvenile courts. Juvenile cases are currently heard in the county courts, except where there is a separate juvenile court. All three IT budget request projects are related to the JUSTICE system. Project #05-02 Acquire Juvenile Case Management System is the highest priority for the Supreme Court. There is no automated juvenile case management system in place. Currently, all juvenile records dealing with delinquency, abuse and neglect, and placement are on paper format. Juvenile cases involve the whole family and JUSTICE cannot handle this type of case. JUSTICE can handle criminal cases because they deal with an individual and a single event. Non-criminal juvenile cases typically involve

many individuals, cover multiple events, and may be active for many years. Two consultants have looked at JUSTICE to see if it will work for Juvenile courts and both have indicated it will not work with juvenile cases. If the court wanted to develop an interface for JUSTICE to revise the system to work with children and families, it would take at least three years and $3 million. Questions arose regarding the following: can we use federal government software that is already in place for federal courts versus spending dollars to develop our own system; has research been done to determine what other states are doing with juvenile cases; is JUSTICE an adequate system; and, are we creating systems that don't communicate with each other? Commissioner Bryan suggested that project #05-03 Trial Court Automation Strategy should be funded so that both the JUSTICE and Juvenile court system could be evaluated and analyzed for recommendations and/or possible solutions.

Workers Compensation Court: Glen Morton, Administrator
The Workers Compensation Court's budget is separate from the Supreme Court's budget. Workers Compensation Court has more regulatory requirements than the criminal and civil court systems. All three projects are related to a re-engineering process to become paperless. In order to do electronic filings, the court must first have internal electronic files. Mr. Morton entertained questions.

Health and Human Services Systems: Jim McGee, Administrative Services, Information Systems & Technology
Seven of the nine projects are continuation projects. Projects such as CHARTS, NFOCUS, and MMIS scored low but are vitally important to Nebraska families. Monies for these projects are for continuing ongoing maintenance and support. Some of the funding may go to new projects which are enhancements to the existing system. The federal government continually issues new mandates that the agency must incorporate into its computer systems. The request for funding to replace MMIS is a different situation. MMIS is based on older technology that is expensive to modify. HHSS knows this, because of changes made for Y2K and HIPAA compliance. HHSS is facing major modifications in the future to meet additional federal requirements. In the long run, HHSS believes that it will be more cost effective to replace MMIS than to patch it again. In order to submit an IT budget request on time for the biennium, the agency had to make an educated guess regarding the budget needed to implement a new system. The State of Nebraska will be spending more dollars on Medicaid than any other program in the state. The agency just completed an evaluation of different options for MMIS. The results are still being reviewed. Mr. McGee entertained questions.

Department of Roads: Jon Ogden, Information Systems
Of the agency's four highly scored IT budget requests, one is for a new project and the others are continuation projects. The new project is called the PioneerNET, which will be the software package for managing the various components that provide functionality to each of the District Operation Centers (DOC). The system will include video servers, software servers, databases, and archive management servers located in each District. It will assist in managing and monitoring the freeway system for motorists. Mr. Ogden entertained questions.

Nebraska Department of Education: Mike Kozak, Technology Planning/Internal Infrastructure Facilitator
The Distance Learning—Infrastructure, Programming and Training Project intends to capitalize on the three strategic initiatives of the NITC in order to improve the access, content and training opportunities of distance learning to address the essential education expectations for all Nebraska schools: Network Nebraska, Statewide Synchronous Video Network, and the Nebraska eLearning Initiative. About 1/3 of Nebraska schools will not have distance learning abilities if this project is not moved forward. If general funds are not available, alternative funding must be explored. It was recommended to include a comment regarding the use of non-general funds such as a re-direction of lottery monies. Mr. Kozak entertained questions.

University of Nebraska: Walter Weir, Chief Information Officer
Funding is being requested for a University Enterprise Server Upgrade for the University's financial and student information systems. Mr. Weir entertained questions.

Chief Information Officer: Steve Schafer, CIO, State of Nebraska
Previously, the first two state government security audits and the security assessment for 2005 have been funded through grant dollars. Because grant funds should focus on one-time projects rather than on-going programs, Mr. Schafer requested funding for security audits in his operating budget. The budget for security audits would be funded through the cash fund. Mr. Schafer entertained questions.

After discussing what kind type of prioritized list to forward, it was decided to have a Tier I and Tier II list.

Commissioner Smith moved to designate the following 5 projects for Tier I. Commissioner Brown seconded the motion. Discussion followed.

- **#13-01 Distance Learning-Infrastructure, Programming, and Training from the Nebraska Department of Education**
- **#51-01 University Enterprise Server Upgrade from the University of Nebraska**
- **#27-06 PioneerNET from the Department of Roads**
- **#05-03 Trial Court Automation Strategy from the Supreme Court**

- **#65-01 Security Audit from the Department of Administrative Services Chief Information Officer**

Commissioner Aerni moved to amend the motion to omit the Supreme Court 05-03 project until more information is received. Commissioner Christensen seconded the motion. Roll call vote: Smith-No, Peterson-No, Heineman-Yes, Heider-No, Christensen-Yes, Bryan-No, Brown-No, and Aerni-Yes. Results: 3-Yes, 5-No. The motion failed.

Roll call vote on the original motion: Heider-Yes, Christensen-Yes, Bryan-Yes, Brown-Yes, Aerni-Yes, Smith-Yes, Peterson-Yes, and Heineman-Yes. Results: 8-Yes, 0-No. The motion was carried by unanimous vote.

Commissioner Bryan moved to designate the following three IT budget requests for Tier II. Commissioner Brown seconded the motion. Discussion followed.

- **#05-01 Install Personal Computers for Courts from the Supreme Court**
- **#37-02 Court Re-engineering-Coverage and Claims from the Worker Compensation Court**
- **#27-07 Project Scheduling & Program Management System from the Department of Roads**

Commissioner Brown moved to amend the motion to include #37-01 Court Re-engineering-Vocational Rehabilitation from the Workers Compensation Court. Commissioner Aerni seconded the motion. Roll call vote: Heineman-Yes, Peterson-Yes, Smith-Yes, Aerni-Yes, Brown-Yes, Bryan-Yes, Christensen-Yes, and Heider-Yes. Results: 8-Yes, 0-No. The motion was carried by unanimous vote.

Roll call vote on the original motion as amended: Aerni-Yes, Smith-Yes, Brown-Yes, Peterson-Yes, Bryan-Yes, Heineman-Yes, Christensen-Yes, and Heieder-Yes. Results: 8-Yes, 0-No. The motion was carried by unanimous vote.

Discussion followed regarding the remaining project proposals. It was suggested to group all continuation projects in one group (with exception of the highly scored HHSS 25-09 Network Technology Renewal Plan) and give agencies an opportunity to resubmit their request with additional information, address inoperability as well as the benefit to Nebraska's citizens.

Commissioner Smith moved to group continuation projects together, for agencies to re-submit additional information at their discretion, prior to the NITC making a recommendation for the budget process. Commissioner Christensen seconded the motion. Roll call vote: Aerni-Yes, Brown-Yes, Bryan-Yes, Christensen-Yes, Heider-Yes, Heineman-Yes, Peterson-Yes, and Smith-Yes. Results: 8-Yes, 0-No. The motion was carried by unanimous vote.

Questions and/or comments regarding the process included the following:

- Should continuation projects be prioritized? Instead of including them, the agency could provide an update on the project's progress.
- Should projects for replacement of equipment be included?
- Should a minimum technical score rating be implemented? Only those projects that meet the minimum rating would be forwarded.
- None of the proposals indicated what other states were doing.
- Agencies also struggled with what and how much information to include in the proposal form.
- Should cash funded projects be in the same priority list as general fund projects?
- Should three classifications - ongoing projects, continuation projects, and new projects - be considered?
- What about the agencies that did not submit proposals?
- What is considered an IT project?
- It would be beneficial to determine what the state is actually spending on IT in order to make enterprise decisions.

At a future meeting, Lt. Governor Heineman suggested a briefing on the IT efforts of the Department of Administrative Services. Steve Schafer also offered to discuss the Enterprise Architecture for State Government, which would address some of the issues raised. Lt. Governor Heineman will discuss this further with Steve Schafer, Chief Information Officer, and Lori McClurg, Department of Administrative Services Director.

After discussion of the application and prioritization process, Mr. Schafer stated that the CIO's office plans to lead an assessment, evaluation and examination of the forms and processes. Input will be solicited from the Commissioners, councils and technical reviewers.

Mr. Weir announced that the Department of Administrative Services-Division of Communications received the 2004 Team of the Year Award from the Nebraska State Government Chapter of the National Management Association for the Statewide Backbone Project. Photos of the team with the award were given to the Commissioners.

NITC BIENNIAL PROGRESS REPORT

Commission Christensen moved to approve the NITC Biennial Progress Report to the Governor and Legislature. Commissioner Peterson seconded the motion. Roll call vote: Heider-Yes, Christensen-Yes, Heineman-Yes, Bryan-Yes, Peterson-Yes, Brown-Yes, Smith-Yes, and Aerni-Yes. Results: 8-Yes, 0-No. The motion was carried by unanimous vote.

At a future meeting, Lt. Governor would like a discussion on the IT ratings that the State of Nebraska has received on several national surveys.

NITC STRATEGIC INITIATIVES

Commissioner Brown moved to approve and endorse the revised NITC Strategic Initiatives. Commissioner Peterson seconded the motion. Roll call vote: Brown-Yes, Peterson-Yes, Aerni-Yes, Heineman-Yes, Heider-Yes, Bryan-Yes, Smith-Yes, and Bryan-Yes. Results: 8-Yes, 0-No. Motion carried by unanimous vote.

PRESENTATION BY NETC (DATACASTING TECHNOLOGY)
Mike Beach, Assistant General Manager, Technology, Nebraska Educational Telecommunications Commission

Mr. Beach provided a demonstration of datacasting technology. Data is transmitted over the unused portion of the broadcast bandwidth allocated for NET's television transmitters. The hardware (an antenna and converter box) and software are relatively inexpensive Files can be accessed from a local drive or a server. The demonstration included video multimedia, Word documents, a PowerPoint presentation, and a pdf file. Digital rights are an issue. This type of broadcasting is available across the state. NET has been working on interfaces with some Nebraska schools. Mr. Beach entertained questions.

OTHER BUSINESS

There was no other business.

NEXT MEETING DATES AND TIMES, ADJOURNMENT AND TOUR OF THE NETC BUILDING

The next meeting dates will soon be determined. More proposed dates will be sent to Commissioners.

Commissioner Aerni moved to adjourn. Commissioner Christensen seconded the motion. All were in favor. The motion was carried by unanimous voice vote.

The meeting was adjourned 3:55 p.m. Members and guests were invited to stay after the meeting for a tour of the NETC building.

Meeting minutes were taken by Lori Lopez Urdiales and reviewed by the staff of the Office of the CIO/NITC.

Nebraska Information Technology Commission

Strategic Initiatives Update

Network Nebraska

Nebraska Telehealth Network

Statewide Synchronous Video Network

Community IT Planning and Development

Nebraska e-Learning

Enterprise Architecture

E-Government

Security and Business Resumption

March 2005

Contents

Network Nebraska

1. **Develop and offer Internet I services to eligible network participants by January 10, 2005.**

   Status: Network Nebraska Internet service has been extended to eligible participants at a unit price approximately 50% of the October 2003 unit price. In addition, a service provider was contracted to provide redundant service out of the Omaha area. As of March 2005, an estimated 250,000 persons are being served by Network Nebraska Internet and transport services within state government, higher education, and K-12. This includes all four campuses of the University of Nebraska, two state colleges, three of the six community colleges, and all or part of the schools represented by ESUs 7, 10, 11, 15, 16, and 18.

2. **Identify Tier II communities that offer opportunities for aggregation for services onto the network.**

   Status: Additional Tier II communities are still being considered. Wayne, Nebraska is aggregating Internet service from municipal and education entities through wireless service provided by Wayne State College. Tier II aggregation discussions have also occurred with Mid-Plains Community College in North Platte, UNK and ESU10 in Kearney, and the municipalities of Scottsbluff and Gering.

3. **Create a Service Level Agreement for use by CAP and the eligible network participants no later than November 1, 2004.**

   Status: The Service Level Agreement has been developed and distributed to eligible network participants and suggested changes are now being reviewed.

4. **Create a Network Nebraska Level 1 Helpdesk no later than November 1, 2004.**

   Status: Call center is up and running staffed by NET.

5. **Create a Network Nebraska website no later than December 15, 2004.**

   Status: Network Nebraska website, www.networknebraska.net is posted and fully functional. Additional documents and resources are being added and linked as needed.

6. **Meet with the Technical Subcommittee of the Nebraska Statewide Telehealth Network to discuss issues related to network administration and management.**

   Status: Ongoing.

Nebraska Statewide Telehealth Network

1. **Identify options for integrating the Nebraska Telehealth Network with the statewide synchronous video network and Network Nebraska.**

   Status: The Nebraska Statewide Telehealth Network has formed a group to address network scheduling and is exploring the possibility of coordinating efforts with the Statewide Synchronous Video Workgroup to ensure compatibility with education.

2. **Report on any changes to legislation or regulations that would impact continued support of telehealth through the Nebraska Universal Service Fund to the Community Council and Nebraska Information Technology Commission at least annually.**

   Status: Possible legislation affecting the Nebraska Universal Service Fund is being monitored. LB 751 introduced by Senator Foley would require the State Treasurer to transfer all funds in excess of 20 million dollars from the Nebraska Telecommunications Universal Service Fund. LB 722's Committee Amendment 442 would create a Public Infrastructure Utilization Task Force with funding of $250,000 to $350,000 from the Nebraska Universal Service Fund.

3. **Monitor legislation, regulations, or other threats to the continued support of telehealth through the federal Universal Service Fund and update the Community Council and Nebraska Information Technology Commission at least annually.**

   Status: Possible legislation affecting the Universal Service Fund is being monitored. Significant changes to the Telecommunications Act of 1996 including the Nebraska Universal Service Fund are expected to be introduced.

4. **Encourage continued cooperation of all entities involved in the development and management of the Nebraska Statewide Telehealth Network by facilitating meetings on specific issues as needed.**

   Status: No action needed.

5. **Meet with the Technical Subcommittee of the Nebraska Statewide Telehealth Network to discuss issues related to network administration and management.**

   Status: No action taken. A meeting will be scheduled later this spring.

6. **Form a subcommittee to develop a plan for future educational programming and organize at least one educational program on an issue related to the delivery and expansion of telehealth.**

   Status: A subcommittee has been formed. Workshops were held Sept. 10 and Feb. 18. A workshop is being planned for the Panhandle later this spring.

Statewide Synchronous Video Network

1. **Identification of a single audio and video standard for low-bandwidth distance learning and videoconferencing.**

   Status: Completed. The NITC approved the H.263/H.264 video compression protocol and G.722, G.722.1, and G.728 audio compression protocols.

2. **Development and submission of a Congressional funding request to fund upgrade of classroom and networking resources necessary to bring K-12 and higher education distance learning facilities into compliance.**

   Status: Congressional request of $9.8 million was submitted on September 8, 2004. The funding request was declined.

3. **Designation of a fiscal entity to oversee bidding, ordering, delivery and installation of equipment.**

   Status: The white paper, "Converting distance learning networks to a high bandwidth, flexible infrastructure" provides several options for bidding and procurement of equipment and services. The Distance Education Enhancement Task Force, if created as described in LB 689, would provide recommendations for this action item by December 31, 2005.

4. **Equipment RFP, bidding, ordering, delivery and installation of equipment.**

   Status: The Distance Education Enhancement Task Force, if created as described in LB 689, would provide recommendations for this action item by December 31, 2005.

5. **Research scheduling systems and enterprise resource management programs.**

   Status: Research continues on this action item.

6. **Purchase or develop a scheduling system and/or enterprise resource management program.**

   Status: The Distance Education Enhancement Task Force, if created as described in LB 689, would provide recommendations for this action item by December 31, 2005. Timeframe likely to be delayed until summer 2006 at the earliest.

7. **Explore options for a network operations center that assures particular qualities of service.**

   Status: The Distance Education Enhancement Task Force, if created as described in LB 689, would provide recommendations for this action item by December 31, 2005.

8. **Development of a web-based clearinghouse that allows originators to post events and users to register for or view the date, time and frequency of individual events.**

   Status: The Distance Education Enhancement Task Force, if created as described in LB 689, would provide recommendations for this action item by December 31, 2005.

9. **Development of training modules to accompany equipment orientation.**

   Status: The Distance Education Enhancement Task Force, if created as described in LB 689, would provide recommendations for this action item by December 31, 2005.

10. **Research models from other states' education networks.**

    Status: The Distance Education Enhancement Task Force, if created as described in LB 689, would provide recommendations for this action item by December 31, 2005.

Community IT Planning and Development

1. **Work with at least 6 community or regional technology committees to develop IT plans through the IT Planning and Mini Grant program**

   Status: Grants were awarded to Chappell, Cheyenne County, Cuming County, Hartington, Kearney, and Nemaha County. Each local committee is making significant progress on conducting community assessments.

2. **Provide continuing support for the 17 community and regional technology committees which have participated in the 2002-2003 and 2003-2004 IT Planning and Mini Grant programs.**

   Status: Continuing support is being provided via e-mail and telephone conversations.

3. **Promote technology-related development through the quarterly newsletter, TANgents.**

   Status: The winter issue of TANgents was published in late January 2005 and is available at http://extension.unl.edu/tangents/tangents_contents1-05.htm .

4. **Work with the Nebraska Rural Initiative to identify options for the expanded use of youth to assist in IT development activities.**

   Status: A meeting is being scheduled with the Nebraska Rural Initiative.

5. **Complete an inventory of e-commerce training programs, gap analysis and recommendations for coordinating e-commerce training.**

   Status: Completed.

6. **Develop a handout with tips for choosing a Web designer.**

   Status: Completed.

7. **Develop an implementation plan for e-commerce coordination.**

   Status: The Nebraska Rural Initiative is completing an implementation plan.

Nebraska eLearning Initiative

1. **Organize a series of October 2004 Planning Workshops to bring together participants who have a stake in improving educational and training opportunities for Nebraska citizens through eLearning.**

   Status: Six workshops were conducted between October 11 and 22, 2004. Summary documents will be posted to an Angel collaborative community site for threaded discussion among the workshop participants.

2. **Develop a design document detailing the technology components, standards, costs and administration of a Nebraska eLearning Knowledge Repository for the sharing of educational content.**

   Status: In progress.

3. **Work with education and staff development professionals to document strategies, techniques and tools used in course management and create a clearinghouse of eLearning best practices and training modules.**

   Status: In progress.

Enterprise Architecture

1. **Governance and Planning**

   Status: Version 1.0 has been written and is ready for presentation to the State Government Council. Version 1.0 includes the topics of Governance and Planning and Business Architecture and Management Principles. Version 2.0 will focus on the technology architecture, including the topics of shared services, technology drivers and IT principles.

2. **Compliance Plan**

   Status: The chapter on governance and planning in version 1.0 of the enterprise architecture includes a compliance strategy and the process for justifying a variance.

3. **Integration Plan**

   Status: The chapter on governance and planning in version 1.0 of the enterprise architecture includes a discussion on integrating other processes with the enterprise architecture.

4. **Technical Architecture Framework**

   Status: Deferred to a future version, when we have a better understanding of what is involved in developing and maintaining the enterprise architecture.

5. **Technical Architecture Blueprint**

   Status: The chapter on Business Architecture and Management Principles version 1.0 of the enterprise architecture summarizes the important business drivers affecting technology in Nebraska. A future version will document existing inventory and defacto technology standards.

6. **Enterprise licensing**

   Status: Enterprise agreements in place: IBM Software (ELA); IBM Hardware Maintenance (CHIS); Microsoft Software; IBM WSCA; Dell WSCA; HP WSCA; Gateway WSCA; 4 Vendors provide Temporary Information Technology Contract Help; KALOS (AS/400 hardware and software); MicroFocus (development environments); 9 Vendors provide remote PC and network support on a time and material basis. Contracts with ESRI and Oracle are pending, as are additional WSCA vendors.

7. **Shared services**

   Status: In progress. This topic was discussed at the February State Government Council meeting and will be the focus at the March work session of the State Government Council.

E-Government

1. **Work with the Secretary of State's Office to provide enhancements to election related information and services.**

   Status: Completed. Enhancements made for November 2004 election.

2. **Work with the Accountability and Disclosure Commission to provide for secure online filings and improved access to information.**

   Status: Improvements to information access completed.

3. **Work with the Legislature to provide additional tools to track legislative information. The Nebrask@ Online Manager is developing additional features, including the ability to track multiple bills from one location and the use of e-mail "push" technology.**

   Status: Completed.

4. **Work with the Department of Motor Vehicles to provide for online vehicle registration and drivers license renewal. DMV is in the process of implementing two systems – insured motorists database and digital drivers license system – which will allow for the future deployment of these online services**

   Status: No change.

5. **Work with the Nebrask@ Online Manager and county officials to provide the means for online payment of property taxes and other local fees.**

   Status: State Records Board grant application submitted for a pilot project with six counties.

6. **Prepare a comprehensive strategy for online licensing of regulated professionals.**

   Status: Work ongoing, to be posted. Online filing on hold.

7. **Working with the various agencies involved in business registration – including the Secretary of State, Department of Revenue, and Department of Labor – create an online system for business registration.**

   Status: Work group established. Analysis underway by NOL and agencies.

8. **Prepare a report on the barriers and options for providing online access to certain, limited, criminal history information.**

   Status: On hold.

9. **Develop an online application for use by businesses attempting to find a suitable site for business development.**

   Status: No change.

10. **Improve the business forms database maintained by NOL and enhance the search capabilities.**

    Status: Work on application completed, work on data is ongoing.

11. **Under sponsorship of the Education Council of the NTIC, The Nebrask@ Online Manager will work with the Education Council educational institutions to provide enhancements to the Education Portal, including but not limited to an Information Technology training calendar; searchable database of educational courses, degrees, and programs; and statewide application for admission to higher education institutions.**

    Status: Information Technology Training Calendar under development; Searchable Database project terminated, no plan to continue, another source provides similar information; Statewide Application for Admission, project terminated, no plan to continue.

12. **The Department of Education is developing online teacher/administrator certification.**

    Status: Completed.

13. **Develop strategies to address intergovernmental cooperation groups; integration of government information and services; the development of a local government portal; and forms automation.**

    Status:

    Intergovernmental Collaboration Groups: The Juvenile Data Sharing Work Group (created by CJIS and SGC) sponsored a study to prepare a strategic plan for data sharing among entities providing services to children. That study will be finished in March 2005. The Steering Committee on Child Abuse and Neglect Information Exchanges prepared an interim report in October that recommended six short-term projects. MOAs for those projects have been signed (except for one) and those projects are now getting underway. Further information is available at: http://cio.nol.org/CTF/. In January, the Office of the CIO submitted an application to the National Governor's Association for a $50,000 grant to conduct a pilot project for using Global XML technology to enable existing systems to exchange data on child abuse cases. Nebraska's project is one of six out of 21 proposals, which was approved. We are waiting for the contract from NGA before initiating work.

    Local Government Portal: On schedule to be incorporated into overall NOL site redesign currently planned for June 2005.

Integration of Government Information and Services: A steering committee is working on integrating the information system needs of the Foster Care Review Board into the NFOCUS system maintained by HHS.

14. **The State Government Council will identify specific improvements and value-added services to be incorporated into the state employee portal, Nebrask@ Online for State Employees (www.nebraska.gov/employee/).**

    Status: No change.

15. **Develop a marketing strategy to increase public awareness and the use of e-government services.**

    Status: A meeting was held with agency PIOs on October 1 to explore different strategies for marketing. NOL has hired a marketing director. NOL is developing recommendations for the next State Records Board meeting.

16. **Prepare draft standards for all agency home pages to include privacy and security statements.**

    Status: Webmasters Work Group developed draft standard under review by the State Government Council. Draft security statement to be reviewed by the State Government Council and State Records Board.

17. **The SGC will work with other entities to investigate ways of providing authentication, especially for first time encounters with users.**

    Status: No change.

Security and Business Resumption

Security

1. **Request funding for the CIO to contract for security audits.**

   Status: Completed.

2. **Investigate opportunities for aggregating efforts of several state agencies that face federal requirements for security audits.**

   Status: Working with agencies.

3. **Prepare RFP and Scope of Work.**

   Status: RFP underdevelopment, to be released Spring/Summer 2005.

4. **Conduct 2005 Security Audit.**

   Status: Pending release of RFP.

5. **Establish an authentication standard to be submitted to the NITC to seek approval by the March 2005 meeting.**

   Status: Completed.

6. **Implement the Content Management structure for all agencies.**

   Status: Work underway.

7. **Propose two-factor authentication standard to NITC Directory Workgroup and State Government Council.**

   Status: Timeline to be revised.

8. **Provide Web-Based Single sign-on (WSSO) guideline to any client/application that desires it.**

   Status: Timeline to be revised.

9. **Review incident reporting procedures to determine need for changes in what is reported and the reporting requirements.**

   Status: Completed. The Division of Communications is developing an incident reporting process.

10. **Communicate reporting requirements to agencies.**

    Status: Pending completion of previous item.

11. **Configure all public state IP addresses (164.119) behind the state's firewall complex.**

    Status: Completed.

12. **Implement an intrusion detection and prevention system on the State's Internet connection as a part of a layered defense.**

    Status: On schedule.

13. **Investigate and recommend an enterprise solution to ensure that encrypted traffic adheres to State security requirements.**

    Status: On schedule.

14. **Evaluate and recommend options for providing encryption to clients across the state's Wide Area Network.**

    Status: On schedule.

Business Resumption

15. **Conduct an "executive overview" briefing (orientation exercise) to state agencies (using either the State Government Council or the Security Work Group as a forum) explaining the progress and current and future activities in the development of disaster recovery plans.**

    Status: Pending completion of DAS contract with vendor.

16. **Encourage agencies to develop agency business continuity plans and disaster plans for information technology by seeking funding sources, providing training on developing plans, and providing technical assistance. The focus should be at the business level.**

    Status: Pending completion of action item 15 above.

17. **Identify and develop procedures for common elements that should be addressed in all or most business continuity plans and disaster recovery plans for information technology.**

    Status: Pending completion of action item 15 above.

18. **Develop a shared recovery capacity serving state government and the University of Nebraska.**

    Status: Initial hardware and communications capabilities in place. Additional implementation work ongoing.

19. **Conduct a briefing for state agency information technology staff (orientation exercise) describing the disaster recovery activities that will be performed by IMServices and the disaster recovery testing that has been completed.**

    Status: On time.

20. **Evaluate current status of testing and recommend testing strategies for different kinds of systems.**

    Status:: DAS performed a “table-top” disaster recovery exercise in October 2004. In November 2004, NEMA sponsored a statewide table-top exercise. A NEMA-sponsored DAS exercise is scheduled in April 2005.

March 8, 2005

To: NITC Commissioners

From: Anne Byers

Subject: Community Council Membership

At the Community Council meeting on Feb. 23, 2005, the Community Council approved the nominations of three new members and the renewals of four members. We are asking for your approval of the nominations and renewals of the following individuals:

New Members

- John Jordison, Great Plains Communications
- Lynn Manhart, Central City Public Library
- Steve Williams, Nebraska Department of Economic Development

Renewals

- K.C. Belitz, Columbus Area Chamber of Commerce
- Norene Fitzgerald, York County Development Corporation
- Georgia Masters Keightley, City of Crawford
- Mary Wernke, Letter Perfect Communications

Biographical information on Steve Williams, Lynn Manhart, and John Jordison are included on the following pages.

Lynn Manhart
Director
Central City Public Library

I am a Nebraskan native and upon graduation of high school, I enlisted into the Active Duty Army for four years. Upon discharge I enlisted into the Nebraska Army National Guards and entered college at the University of Nebraska at Kearney. I now have a Bachelor's Degree in Broadcast Journalism, and I am completing a career in the military with 24 years of combined service. My career field in the military began as an enlisted medical aid, and ended as an officer in administration. I commanded a postal unit and two training sites. I taught Officer Candidate School, Drug and Alcohol Awareness, computer classes and Diversity.

The achievement I am most proud of is being the library director at Central City Public Library. I enjoy working with the public and learning new things as I go along. Our services reflect the changing needs of our customers. As of date, we have 9 computers available to the public and broadcast and maintain Central City's community channel.

My husband teaches for Central City Public Schools and we have two beautiful daughters. We intend on having our daughters grow up in a community that will provide a good education in a safe environment. Central City is a very family oriented community with great opportunities for our children. Our schools, library, child development center, and fitness center are all state-of-the-art facilities which is important in an ever-changing world. Thank you for taking the time in considering my nomination to the NITC Community Council.

John C. Jordison
Director of Government Affairs and Economic Development
Great Plains Communications

John C. Jordison was born April 25, 1951 in Fort Dodge, Iowa. He graduated from Hoover High School in Des Moines, Iowa. Although accepted academically to attend the U.S. Coast Guard Academy, he attended Drake University in Des Moines, graduating in 1973 with a BA degree in Journalism.

Jordison worked for the *Webster City Daily Freeman-Journal* in 1974-75, served as a Peace Corps Volunteer in Niger, West Africa in 1975, co-founded *The Iowa High School Athletic News* and served as president and publisher in 1976-78, and worked in sales for Xerox Corporation in 1978-79.

From 1979 through 1986, Jordison served in various capacities for Northern Natural Gas Company, Peoples Natural Gas Company, and other subsidiaries of InterNorth, Inc. in Omaha, Nebraska. In 1986, he became president of the Nebraska Tax Research Council

in Lincoln, Nebraska, a non-profit, non-partisan fiscal policy analysis organization that monitors state and local government tax and spending issues.

In late 2002, after 16 years with the Tax Research Council, Jordison accepted the position of Director of Government Affairs and Economic Development with Great Plains Communications in Blair, Nebraska, a family-owned telecommunications company.

Great Plains Communications provides telecommunications, cable television and Internet services to 77 Nebraska communities, which are located across Nebraska from Imperial to Gordon to Ponca to Red Cloud. Great Plains' service area represents 13 percent of the geographic area of Nebraska, but less than five percent of the population. The company is dedicated to promoting community and economic development in its service area and the preservation of "rural Nebraska."

Jordison is married to LouAnn Vollertsen Jordison. They have five adult children, and reside on an acreage east of Lincoln.

Steve Williams
Development Consultant—New and Existing Business
Nebraska Department of Economic Development

Steve Williams has been with the Nebraska Department of Economic Development since 1979. Between 1979 and 1987, he worked in the Research Division focusing on community and housing development. After staffing Governor Kerry's task forces on small business equity and public pension fund investment in 1983, his work shifted more toward business development research and consulting.

Since 1988, Steve Williams has operated the 'One-Stop' business assistance office and beginning in 1993 the affiliated Internet site which became assist.neded.org. An average year sees approximately 2,500 requests from startup and existing businesses for various types of information and assistance.

Steve Williams also served as a board member of the Nebraska Public Employees Retirement Board, 1985-89 (representing State employees).

Agency	Project	FY2005-06	FY2006-07
Workers' Compensation Court	Court Re-engineering - Adjudication (REVISED)		$ 534,066

SUMMARY OF REQUEST (Executive Summary from the Proposal)

This project will procure, develop, install, and support Court Re-Engineering enhancements in the Adjudication section of the court. These enhancements will be based upon the results from current internal re-engineering analysis and the recommendations from a consultant to be engaged in Fiscal Year 2006. From the current internal analysis and court priorities, the first software products to be introduced to the court will be from one or more of the Key Technologies currently identified in the internal analysis that cannot be achieved with existing resources. This projects key technology is Computer Managed Workflow.

FUNDING SUMMARY

	FY2005-06 (Year 1)	FY2006-07 (Year 2)	FY2007-08 (Year 3)	FY2008-09 (Year 4)	Future	Total
2. Contractual Services						
2.4 Other		$ 100,000.00				$ 100,000.00
5. Training		$ 36,382.50				$ 36,382.50
6. Travel		$ 12,127.50				$ 12,127.50
8. Capital Expenditures						
8.1 Hardware		$ 30,000.00			$ 20,000.00	$ 50,000.00
8.2 Software		$ 355,556.25	$ 103,607.44	$ 108,787.81	$ 109,790.00	$ 677,741.50
TOTAL COSTS	$ -	$ 534,066.25	$ 103,607.44	$ 108,787.81	$ 129,790.00	$ 876,251.50
Cash Funds		$ 534,066.25	$ 103,607.44	$ 108,787.81	$ 129,790.00	$ 876,251.50
TOTAL FUNDS		$ 534,066.25	$ 103,607.44	$ 108,787.81	$ 129,790.00	$ 876,251.50

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
III: Goals, Objectives, and Projected Outcomes	14	10	13	12.3	15
IV: Project Justification / Business Case	23	20	20	21.0	25
V: Technical Impact	19	16	20	18.3	20
IV: Preliminary Plan for Implementation	9	7	8	8.0	10
VII: Risk Assessment	10	7	8	8.3	10
VIII: Financial Analysis and Budget	19	18	18	18.3	20
			TOTAL	**86**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
III: Goals, Objectives, and Projected Outcomes	- Good discussion of potential measurement/assessment methods - This proposal describes the use of workflow tools to manage and respond to events in the WCC. The proposal seeks to overlay workflow on its existing case management system.	

Section	Strengths	Weaknesses
IV: Project Justification / Business Case	- Good discussion of alternatives considered - Project justification are documented.	- Provided explanation of problems with current process, not benefits of proposed process - With the exception of computer assisted decision process and event triggers, the problems listed to be addressed by workflow appear to be systems design issues. There is no discussion as to how the WCC will overlay workflow on its existing system design. A task driven system can be achieved without investment in workflow tools. This should be reflected in a ROI analysis.
V: Technical Impact	- Good understanding of technical strengths and weaknesses - Proposed workflow solution integrates well with existing systems.	- Vision appears to include customer (attorney/claimant, etc) self service at a future point. Not sure scalability has received enough attention, if this is future expectation. - The state has selected an enterprise workflow tool that is recognized in the project proposal. Narrative appears to discount the use of that tool in the WCC architecture. This sets the stage for workflow software that operates only in the WCC architecture. A ROI analysis should clarify this business decision.
VI: Preliminary Plan for Implementation	- Selection process and implementation plan are well documented.	- Timelines seem reasonable for a "buy", but too short if a "build" solution is chosen. Difficulty of implementing new business process ("changes in mindset") may be understated. - In an earlier review of this project, this reviewer noted that software selection took place before completing the workflow analysis. This proposal is now in keeping with that observation.
VII: Risk Assessment	- The impact of the introduction of workflow management is well documented, with appropriate planning to minimize risk.	- Technical risks and business process acceptance risks may be understated - This project describes the acquisition and assimilation of workflow software within the computing environment of the WCC. Without a thorough understanding of other initiatives, it is difficult to assess how this technology will mesh with other technologies of the WCC. The answer appears to be one of the outcomes of the engagement of the consulting engineer. The document mentions the evaluation of an in-house solution using existing software and workflow feature inherent in Oracle. This evaluation should be completed before purchasing additional software.
VIII: Financial Analysis and Budget	- Dollar estimates seem low to me but the budget appears to be well documented. - Current and future hardware and software costs are identified in the proposal.	- Budget appears to assume purchase of COTS system…if a build decision is made costs will likely be higher - Cost model does address ROI. Software maintenance at 30% of initial purchase seems high, but the figure must be trusted.

Nebraska Information Technology Commission

Project Proposal Form

New or Additional State Funding Requests
for Information Technology Projects

FY2005-07 Biennium

Project Title	**Court Re-engineering – Adjudication – Revised**
Agency/Entity	**Nebraska Workers' Compensation Court**

About this form…
The Nebraska Information Technology Commission ("NITC") is required by statute to "make recommendations on technology investments to the Governor and the Legislature, including a prioritized list of projects, reviewed by the technical panel, for which new or additional funding is requested." In order to perform this review, the NITC and DAS-Budget Division require agencies/entities to complete this form when requesting new or additional funding for technology projects. For more information, see the document entitled "Guidance on Information Technology Related Budget Requests" available at http://www.nitc.state.ne.us/forms/.

Electronic versions of this form are available at http://www.nitc.state.ne.us/forms/.

For questions or comments about this form, contact the Office of the CIO/NITC at:

Mail: Office of the CIO/NITC
521 S 14th Street, Suite 200
Lincoln, NE 68508
Phone: (402) 471-3560
Fax: (402) 471-4608
E-mail: info@cio.state.ne.us

Submission of Form
Completed forms must be submitted by the same date biennial budget requests are required to be submitted to the DAS Budget Division. Completed project proposal forms must be submitted via e-mail to info@cio.state.ne.us. The project proposal form should be submitted as an attachment in one of these formats: Microsoft Word; WordPerfect; Adobe PDF; or Rich Text Format. Receipt of the form by the Office of the CIO will be confirmed by e-mail. If an agency is unable to submit the application as described, contact the Office of the CIO prior to the deadline, to make other arrangements for submitting a project proposal form.

Section I: General Information

Project Title	Court Re-engineering – Adjudication
Agency (or entity)	Nebraska Workers' Compensation Court

Contact Information for this Project:

Name	Randall Cecrle
Address	1221 N Street, Ste 402, PO Box 98908
City, State, Zip	Lincoln, NE 68508-8908
Telephone	402-471-2976
E-mail Address	IT.Manager@wcc.state.ne.us

Section II: Executive Summary

Provide a one or two paragraph summary of the proposed project. This summary will be used in other externally distributed documents and should therefore clearly and succinctly describe the project and the information technology required.

This project will procure, develop, install, and support Court Re-Engineering enhancements in the Adjudication section of the court. These enhancements will be based upon the results from current internal re-engineering analysis and the recommendations from a consultant to be engaged in Fiscal Year 2006. From the current internal analysis and court priorities, the first software products to be introduced to the court will be from one or more of the Key Technologies currently identified in the internal analysis that cannot be achieved with existing resources. This projects key technology is Computer Managed Workflow.

Section III: Goals, Objectives, and Projected Outcomes (15 Points)

1. Describe the project, including:
   - Specific goals and objectives;
   - Expected beneficiaries of the project; and
   - Expected outcomes.

   Goals, Objectives, Outcomes
   The court has several internal re-engineering projects in various stages of development. Each project has identified key technology(s) that are critical to the project that will later have broader use in other sections of the court. This project's key technology is:

   Computer Managed Workflow.

   A computer managed workflow will result in an optimized flow of activities within the Clerks Office, Judicial Support, and Judges sections of the court. Inputs and outputs will be streamlined to provide just-in-time information and work events. Workflows will be managed graphically which will allow for self-documentation of processes, modeling and testing of changes to procedures, and immediate implementation. A Rules Engine will control the execution of routing logic of work and event notifications. Work activities will be automated to the extent that is appropriate. Each Judge or court staff person will have individualized work queues that will reflect pending actions that are associated with the "days" work. Court management will be able to see the status of an individual docket with overdue activities. Case-load management will be enhanced through the collection and analysis of historical activities.

   Beneficiaries will include court staff and judges and all external stakeholders of the court, including attorneys, insurance companies, injured employees, and employers.

   As caseload grows, the court expects to handle the increased load with minimal staff additions. Activity notices will be immediate to the next processing step. Overdue activities will create alerts to staff, management, and judges. Depending upon pre-set criteria, certain dockets will be able to flow through different paths and to different court members.

2. Describe the measurement and assessment methods that will verify that the project outcomes have been achieved.

   Times between, time to process, number of steps and repeated steps will be used to measure efficiency. Real-time assignment workload levels will assist in routing and re-routing work. Easy of understanding the workflows will determine whether the workflows are self-documenting. Event notifications will be immediate and work queues should only reflect the "days" work. Correctly routed work and notifications will determine whether the Rules Engine is functioning properly.

3. Describe the project's relationship to your agency comprehensive information technology plan.

   This project was discussed in Section 4.A. Strategies and Future Direction as prepared by the court's Presiding Judge and listed in 4.C. Future IT Projects.

Section IV: Project Justification / Business Case (25 Points)

4. Provide the project justification in terms of tangible benefits (i.e. economic return on investment) and/or intangible benefits (e.g. additional services for customers).

   The Adjudication re-engineering analysis identified the following problems:

   The current system requires multiple screens to assign a new case. Screens are not designed to facilitate the task. The system is not task flow driven. The current screen design was built around the structure of data and not around the task which has an impact on productivity.

   The current task management review is not searchable by date. There is no ability to search for all tasks by employee, by day to manage the system at a macro level. Reporting system is not flexible.

   All current decision-making is manual. The current computer system does not have intelligent rules and queries to assist with the decision making process.

   The current system does not have active triggers to notify change of status. Various sections of the court must run daily reports to be aware of docket status change. There is not an electronic calendar for notification of events.

   The current system doesn't allow an individual judge to analyze his/her case load.

5. Describe other solutions that were evaluated, including their strengths and weaknesses, and why they were rejected. Explain the implications of doing nothing and why this option is not acceptable.

Over the last three years, this court invested substantial time and effort to analyze and strategize moving towards a “paperless” court. This work included an extensive analysis of the possibility of collaboration with the Nebraska Supreme Court and Information Management Services (IMServices) in its efforts to increase ability to electronically file and store documents and information on a statewide basis. That effort at collaboration showed that extensive collaboration was not possible because of extensive differences in the specific missions of the Nebraska Workers’ Compensation Court and all other courts of the state of Nebraska. Some of the differences in mission relate to significant agency type functions of the court arising from statutory obligations in the Nebraska Workers' Compensation Act. These functions relate to coverage and claims enforcement, re-education and retraining oversight, dissemination of information, and the process used to review and approve or disapprove applications for lump sum settlements. Another key difference is that the court’s statewide jurisdiction requires statewide judicial mobility, which significantly complicates scheduling and information dissemination on a case-by-case basis.

Based upon the analysis by the court, computer managed workflow is the appropriate strategic solution. Workflow software is fairly mature. Further analysis planned for in the next biennium by an outside consultant, Requests for Information, and Requests for Proposal will determine whether existing off-the-shelf software can be effectively integrated with the current court computer systems and will meet the courts requirements. Off-the-shelf software will require that the court conform to procedural and technical constraints of each unique system. Additional application server hardware will be required.

The court in December 2004 became aware of recently improved features in the Oracle Database and Application Server. As part of the solution selection process which will look at off-the-shelf solutions, the court will also evaluate these improved Oracle features in combination with its existing programming software to determine whether the problems can be solved in an acceptable manner and requirements can be met. Given that the courts current business software systems are almost 100% “in-house” developed, this solution would provide the possible benefit of tighter integration with existing systems at potentially lower development/purchase and on-going costs. There is the possibility that certain requirements may not be immediately met because of the need for custom development.

The court will evaluate what is available at the state’s enterprise level through services provided by IMServices.

Doing nothing leaves the current problems unsolved. It also does not position the court to handle increased workload without the adding of additional staff.

6. If the project is the result of a state or federal mandate, please specify the mandate being addressed.

Not applicable.

Section V: Technical Impact (20 Points)

7. Describe how the project enhances, changes or replaces present technology systems, or implements a new technology system. Describe the technical elements of the project, including hardware, software, and communications requirements. Describe the strengths and weaknesses of the proposed solution.

   The key technologies are all enhancements to our current Microsoft Windows Application and Oracle Relational Database environment. Because the court's offices in Lincoln are on 100 megabit data communications, band-width is not an issue.

   Computer Managed Workflow will require the installation of new software technology on an application server. Because of the structure of the court, the court's three-tier Microsoft Windows Client – Application Server – Database Server model is still the appropriate underlining technology on which to incorporate. The courts current production environment is the Microsoft Windows Win32 construct. The solution must provide the ability for the court to continue to function in that environment. Looking to future expansion to workflows outside the court (attorneys, insurance companies, etc.) the solution must also allow for the movement to a Microsoft .NET environment and their future "Smart Client" technology. Web Services and Service Oriented Architecture (SOA) must also be supported or planned for to integrate effectively and efficiently with our current technology. The solution must also be compatible with the state's Enterprise directory system. The court has developed its own case management system on Win32 and Oracle and is integrating document management directly into that system. The workflow solution must be able to access data stored in Oracle and execute programs developed for the Win32 platform. The solution must also allow for access to the "user work queues" from "in-house" developed business software programs.

   The strength of the current Microsoft Win32 solution provides the court a feature rich, robust application. Microsoft .NET / Smart Client, Web Services, and SOA will allow the court to extend from Win32 to an Internet-based application for those situations were appropriate. At the same time it adds new function points that could fail and make trouble-shooting more complicated. Interfacing with a non-homogenous system based upon a JAVA-based third-party system with the rest of the court systems could prove challenging, but may be addressed through Web Services.

   The courts re-engineering analysis has laid out a roadmap for the court to be paperless by 2011. In order for there to be usable data for the court, as many digital documents as possible must be "intelligent"; that is they must have structured content embedded within them that can be program extractable (e.g. XML). Scanning and optical character recognition does not provide sufficient usable data/information and is not the solution. The court is therefore planning on implementing e-filing systems in future projects. Case-management, document management, and workflow management are underlining technologies that must be in place for e-filing to be successful. Workflow is a potential infrastructure platform for e-filing upon which a custom e-filing system could be developed. When the court reaches the point in its strategic roadmap where end user e-filing becomes a project, it will evaluate software functionality available within the court, the State, and third-party companies.

8. Address the following issues with respect to the proposed technology:
   - Describe the reliability, security and scalability (future needs for growth or adaptation) of the technology.

Computer Managed Workflow must prove to be highly reliable or it will have an adverse effect on productivity. In evaluating and choosing a solution the court will insure that production tools are available to verify that all nodes are functioning, that the solution is able to integrate with the state's Enterprise Directory for identity management, that the solution includes secured work queues for staff to control their assignments, and that the solution is scalable to allow for future implementation in a secured internet environment that would allow for use by attorneys and other external parties.

   - Address conformity with applicable NITC technical standards and guidelines (available at http://www.nitc.state.ne.us/standards/) and generally accepted industry standards.

The court participated in a joint project with IMServices to define accessibility development standards for Microsoft Windows development. Those same standards with other published standards will be used when procuring third-party software solutions. Other standards and guidelines will be reviewed at appropriate times during the projects.

   - Address the compatibility with existing institutional and/or statewide infrastructure.

IMServices and Department of Communications will be brought in to review any new technologies for compatibility.

Section VI: Preliminary Plan for Implementation (10 Points)

9. Describe the preliminary plans for implementing the project. Identify project sponsor(s) and examine stakeholder acceptance. Describe the project team, including their roles, responsibilities, and experience.

All project plans below are tentative and may be revised based upon the recommendations and outcome of a consultant who will be brought in during Fiscal Year 2006 to review current analysis and strategic plans. The consultant will assist the court in deeper business process analysis and preliminary evaluation of alternative technical implementations such as Web Services (WS), Service Oriented Architecture (SOA), Business Process Management (BPM), and Business Process Execution Language (BPEL). A solution will be chosen using standard State Request for Proposal procedures and Proof-of-Concept testing of both third-party software and in-house solutions. The goal is to have selected/procured a solution in Fiscal Year 2006.

Fiscal Year 2007 is tentatively targeted for installation, training, and design and testing of the pilot re-engineered workflow. During the design and testing of the pilot workflow the court will gain critical knowledge necessary to plan for integration with existing systems and custom development. During Fiscal Year 2008 and beyond, fully functional workflows will be designed, developed, tested, and implemented into production. At this point it is not known how long the production roll-out will take.

Internal Court stakeholders have participated in the initial analysis or have been closely informed of the strategy. External stakeholders have not yet been approached, but current plans include having focus group sessions with key external stakeholders during Fiscal Years 2005 and 2006.

The project sponsor is the Courts Presiding Judge. He has actively and directly participated in the analysis phase of the re-engineering. The Information Technology project leader/primary developer has not yet been chosen, but will be one of the Court's Senior or Lead Application Developers. The design team will be comprised of the Presiding Judge, Clerk of the Court, Judicial Support Manager, selected staff from the Clerk of the Court's Office, Judicial Support, Legal and Coverage and Claims sections. The Information Technology Manager / Database Administrator will function as data analyst and will participate heavily in system engineering. Contract programming resources will be used if appropriate and funds are available. Policy issues that need to be addressed will be taken to the Presiding Judge and Court Administrator.

The below table represents the existing internal experience upon which the courts project team will be based.

Experience

Title	Total	In Current Position
Lead Application Developer (IT Project Leader)	15+	2
Presiding Judge	BS in Agricultural Economics, MS Economics Juris Doctorate Private Business Owner - 10 County Commissioner - 4 Private attorney - 12 WCC Judge - 8	4
Clerk of the Court	40+	20
Judicial Support Manager	15	3
Clerk of the Court and Judicial Support Staff	10+	5+
Legal Staff	5+	5+
Coverage and Claims Staff	6+	6
IT Manager/DBA	28	9

10. List the major milestones and/or deliverables and provide a timeline for completing each.

- Fiscal Year 2006 – Consultant Engagement and Procurement process completed.
- Fiscal Year 2007 – Installation, training, and design and testing of the pilot re-engineered workflow.
- Fiscal Year 2008 and beyond - Fully functional workflows designed, developed, tested, and implemented into production.

11. Describe the training and staff development requirements.

For all the key technologies, not only will there be major training requirements, but changes in mindset on how to perform the duties. Workflow will require staff training in the use of graphic flowchart / diagramming tools to build the workflows. Staff training will also be required on how to use the new software. IT Staff will need to be trained on implementation, maintenance, and administration.

12. Describe the ongoing support requirements.

A Workflow system will require annual software support and upgrade fees, planning for hardware updates, etc. Purchased software will need to under upgrade/maintenance agreements.

Section VII: Risk Assessment (10 Points)

13. Describe possible barriers and risks related to the project and the relative importance of each.
14. Identify strategies which have been developed to minimize risks.

(Combined Answer)

- Acceptance of the change by court personnel brought about by automating workflows.
    - Managers are involved in projects.
    - Staff is involved in design and selection processes.
    - Implemented software is friendly to work with.
- Solutions may have an unintended adverse impact on other areas of adjudication.
    - All impacted areas and sections are involved in impact analysis.
- Implementation of workflow could cause the loss of knowledge of how the court systems functions at the over-all level.
    - Periodic reviews of workflows need to be performed with staff to retain an understanding of the full process flow.
    - Workflow diagrams and rules definitions must be easily understood.
- A workflow system may have slow system performance.
    - The criteria for product select needs to state performance requirements.
    - Proof of concept testing will be required before a final product decision is made.
    - Response times must be monitored and appropriate corrective action taken.
- Software maintenance costs will escalate in future years.
    - Maximum maintenance cost increases are negotiated as part of any contracts.
    - Initial costs estimates were budgeted higher than usual.
- Consultant engagement will not produce any conclusive results.
    - The court has been attending AIIM, ARMA, E-Court, Oracle, Microsoft, and Borland conferences during the past six years and is gaining knowledge that will assist in the selection of a consultant and participation in the process.
    - Other outside agencies (such as IMServices) will be asked to participate where appropriate and neutrality can be achieved.
- The selected solution could not meet requirements once placed in production.
    - The court has participated in several Requests for Proposal (RFP's) with IMServices and other agencies over that last several years and has learned from these experiences.
    - The selection process will include a Proof-Of-Concept phase that will provide hands-on testing of a preliminarily selected solution based upon a actual workflow. The court completed a full process Adjudication Process analysis several years ago and has documented process flows available to choose from for the Proof-Of-Concept.
    - The court will evaluate an in-house solution based upon its existing software development platform of Borland Delphi Programming Software and Oracle Database/Application Server software. Both support Microsoft .NET, Web

Services, etc. Oracle also provides workflow features in its database and application server that will be evaluated.

Section VIII: Financial Analysis and Budget (20 Points)

15. Financial Information

Financial and budget information can be provided in either of the following ways:

(1) If the information is available in some other format, either cut and paste the information into this document or transmit the information with this form; or

(2) Provide the information by completing the spreadsheet provided below.

Instructions: Double click on the Microsoft Excel icon below. An imbedded Excel spreadsheet will be launched. Input the appropriate financial information. Close the spreadsheet. The information you entered will automatically be saved with this document. If you want to review or revise the financial information, repeat the process just described.

Excel Spreadsheet
(Double-click)

Financial information appears at the end of the docuement.

16. Provide a detailed description of the budget items listed above. Include:
    - An itemized list of hardware and software.
    - If new FTE positions are included in the request, please provide a breakdown by position, including separate totals for salary and fringe benefits.
    - Provide any on-going operation and replacement costs not included above, including funding source if known.
    - Provide a breakdown of all non-state funding sources and funds provided per source.

See side notes on spreadsheet above for line-item explanations.

- Hardware estimates are based upon recent purchases.
- The software and professional services estimates were based upon Requests For Information (RFI) sent to three leading vendors whom provide workflow products. These vendors ranged in the medium to high-end category of product offerings. The following preliminary criterion was provided to the vendors to respond.
    - 50 User production license
    - 10 User development license
    - Server software hosted on a 2-CPU Intel / Windows Server platform
    - Client/Server or .NET based product.
    - Need Installation Costs, Administration Training Costs, Startup Training Costs for In-house 10 Users
    - Professional Services costs for installation and customization.
    - Additional Costs not included in software license (such as database license, etc.)

- The three product responses to the RFI are all agnostic, off-the-shelf offerings that can be integrated with the courts current systems. A Process Flow Diagrammer and Rules Engine are key functional features of all agnostic, off-the-shelf offerings. The court does not want to develop this functionality and does not plan on developing in-house a full-blown workflow management system.
- Court Information Technology staff all have experience in project management in various size projects. Project management and System Development Life Cycle (SDLC) are management tools of all court technology projects.
- Software maintenance costs were estimated higher than standard to cover unknown contingencies.
- Requests for Information were sent to two consultants with experience in workflow management. Based upon preliminary proposals the consultant engagement cost is estimated to be $50,000. The engagement will be funded out of reallocated continuation dollars and were not included in the Budget spreadsheet.

17. Please indicate where the funding requested for this project can be found in the agency budget request, including program numbers.

Program Number 530.

Nebraska Information Technology Commission
Project Proposal Form
Section VIII: Financial Analysis and Budget

(Revise dates as necessary for your request.)

	Estimated Prior Expended	Request for FY2005-06 (Year 1)	Request for FY2006-07 (Year 2)	Request for FY2007-08 (Year 3)	Request for FY2008-09 (Year 4)	Future	Total	
1. Personnel Costs							$ -	
2. Contractual Services								
2.1 Design							$ -	
2.2 Programming							$ -	
2.3 Project Management							$ -	
2.4 Other			$ 100,000.00				$ 100,000.00	**2.4 Other**
3. Supplies and Materials							$ -	Professional Contract Services to assist in the installation, configuration, etc. of purchased software
4. Telecommunications							$ -	
5. Training			$ 36,382.50				$ 36,382.50	
6. Travel			$ 12,127.50				$ 12,127.50	
7. Other Operating Costs							$ -	
8. Capital Expenditures								
8.1 Hardware			$ 30,000.00			$ 20,000.00	$ 50,000.00	**8.1 Hardware**
8.2 Software			$ 355,556.25	$ 103,607.44	$ 108,787.81	$ 109,790.00	$ 677,741.50	Year 2 is the initial hardware purchase, Future represents hardware replacement costs.
8.3 Network							$ -	
8.4 Other							$ -	**8.2 Software**
TOTAL COSTS	$ -	$ -	$ 534,066.25	$ 103,607.44	$ 108,787.81	$ 129,790.00	$ 876,251.50	Year 2 is the initial software purchase. Subsequent years represent the annual maintenance agreement costs.
General Funds							$ -	
Cash Funds			$ 534,066.25	$ 103,607.44	$ 108,787.81	$ 129,790.00	$ 876,251.50	
Federal Funds							$ -	
Revolving Funds							$ -	
Other Funds							$ -	
TOTAL FUNDS	$ -	$ -	$ 534,066.25	$ 103,607.44	$ 108,787.81	$ 129,790.00	$ 876,251.50	

NEBRASKA INFORMATION TECHNOLOGY COMMISSION

STANDARDS AND GUIDELINES

Lotus Notes Standards for State Government Agencies

Category	**Groupware Architecture**
Title	**Lotus Notes Standards for State Government Agencies**: 1. Password Requirements 2. User Names 3. Generic Notes Ids 4. Server Names 5. Organizational Unit Names 6. Group Naming Conventions
Number	

Applicability	☑ **State Government Agencies,** excluding Higher Education; and agencies receiving an exemption pursuant to Section 4.2 ..... **Standard** ☐ **State Government Agencies,** all .....**Not Applicable** ☐ **State Funded Entities -** All entities receiving state funding for matters covered by this document.....**Not Applicable** ☐ **Other: _____** .....**Not Applicable** **Definitions:** **Standard** - Adherence is required. Certain exceptions and conditions may appear in this document. **Guideline** - Adherence is voluntary.

Status	☐ Adopted	☑ Draft	☐ Other:_____
Dates	Date: January 11, 2005 Date Adopted by NITC: Other:		

Authority: Neb. Rev. Stat. § 86-516(6)
http://www.nitc.state.ne.us/standards/

1.0 Technical Standard(s)

1.1 Password Requirements:

The Lotus Notes password requirements must meet the Nebraska Information Technology Commission (NITC) Security Policies -- Access Control Policy password standards. Using a Lotus Notes password strength of 8 or more is recommended to meet SGC standard.

1.2 User Names:

If two users with the same name work in the same agency, the Full Lotus Notes User Name must be unique. A middle initial or other identifier must be added to make the names unique.

Examples:
Jane Q. Doe
Jane (HHSS) Doe

1.3 Generic Notes IDs:

Generic Notes IDs are not acceptable, unless the system provides for authentication and auditing to ensure individual accountability.

As an alternative, the following options are available:

A standard mail-in database is recommended for sending and receiving mail when an agency has the need for multiple people to receive/respond to email.

A business unit mail-in database is recommended for sending and receiving mail when an agency has the need to protect the identity of the user(s) and ensure accountability to and from a shared mail file.

1.4 Server Common Names:

The Domino Server Common Name must be fully qualified so it can resolve to a configured IP address. A fully qualified name consists of a local host name and domain name. The Domino Server Name must be comprised of Common Name, Organizational Unit, and Organization.

Examples:
HHSSMAIL01.HHS.STATE.NE.US/HHSS/NEBRLN
RRRMAIL1.RRR.STATE.NE.US/RRR/ACME

1.5 Organizational Unit Names:

Organizational Unit Names must be 3 to 8 characters in length and must identify the

Agency/Department.

1.6 Group Naming Convention:

Group Names must start with the owning agency first level Organizational Unit. The rest of the Group Name must be followed by a descriptive name identifying the Group's use. The components must be separated by an underscore (_) character or a blank space.

Examples: HHSS_Accounting, DAS_Accounting, DOC Accounting

2.0 Purpose and Objectives

2.1 Password Requirements:

Strict control over passwords is required for application security including email.

An ID that allows multiple users to send messages is considered a security risk. This includes individually assigned user IDs where the password is shared with other staff.

The use of multi-user IDs will NOT be allowed. Individuals can delegate the management of their email and calendar without sharing their password.

Mail-in databases can be used to allow multiple users to read and send memos from a shared location.

2.2 User Names:

Lotus Notes doesn't allow duplicate Lotus Notes User Names.

2.3 Generic Notes IDs:

A Generic Notes ID is any account that does not clearly identify an individual person or employee. Generic accounts are a security risk to an entire system and are not permitted except in an isolated environment.

2.4 Server Common Names:

To improve network connectivity the Domino servers must follow a fully qualified naming convention. The Domino server names will begin with an agency qualifier (the Lotus first level Organizational Unit is recommended), followed by the organization's DNS Domain Name.

2.5 Organizational Unit Names:

Allow for the access to specific resources by groups of users.

Allow the capability to apply security desktop archive, setup and registration policies to group of users.

Allow the ability to make users with same names unique based on their agency name.

2.6 Group Naming Convention:

Allows multiple agencies to have groups that serve the same function.

3.0 Definitions

3.1 Domino Server Name:

Server Name/Agency/Organization

3.2 First Level Organizational Level:

Joe Smith/CSI/DOC/NEBRLN where DOC is the first level Organizational Name

3.3 DNS:

Domain Name Server

3. 4 Isolated Environment:

Server(s) that cannot send e-mail outside it's own environment and that can send mail only to defined users in the isolated environment.

4.0 Applicability

4.1 State Government Agencies

This standard applies to all state government agencies, except higher education and those agencies receiving an exemption under Section 4.2.

4.2 Exemption

Exemptions may be granted by the Technical Panel of the NITC upon request by an agency.

4.2.1 Exemption Process

Any agency may request an exemption from this standard by submitting a "Request for Exemption" to the Technical Panel of the NITC. Requests should state the reason for the exemption. Reasons for an exemption include, but are not limited to: statutory exclusion; federal government requirements; or financial hardship. Requests may be

submitted to the Office of the CIO via e-mail or letter (Office of the CIO, 521 S 14th Street, Suite 301, Lincoln, NE 68508). The Technical Panel will consider the request and grant or deny the exemption. A denial of an exemption by the Technical Panel may be appealed to the NITC.

5.0 Responsibility

Agencies utilizing Lotus Notes.

6.0 Related Policies, Standards and Guidelines

NEBRASKA INFORMATION TECHNOLOGY COMMISSION

STANDARDS AND GUIDELINES

Lotus Notes Guidelines for State Government Agencies

Category	**Groupware Architecture**
Title	**Lotus Notes Guidelines for State Government Agencies**: 1. Internet Address 2. Similar Names
Number	

Applicability	☑ **State Government Agencies,** excluding Higher Education .....**Guideline** ☐ **State Government Agencies,** all .....**Not Applicable** ☐ **State Funded Entities -** All entities receiving state funding for matters covered by this document.....**Not Applicable** ☐ **Other: _____** .....**Not Applicable** **Definitions:** **Standard** - Adherence is required. Certain exceptions and conditions may appear in this document, all other deviations from the standard require prior approval of the Nebraska Information Technology Commission after review by the Technical Panel. **Guideline** - Adherence is voluntary.

Status	☐ Adopted ☑ Draft ☐ Other:_____
Dates	Date: September 16, 2004 Date Adopted by NITC: Other:

Authority: Neb. Rev. Stat. § 86-516(6)
http://www.nitc.state.ne.us/standards/

1.0 Technical Guidelines:

1.1 Internet Address:

The following naming conventions can be used for Internet addresses:

Preferred:
FirstName.LastName@xxx.ne.gov

Acceptable:
FirstName.LastName@xxx.state.ne.us
FLLLLLL@xxx.ne.gov
FLLLLLL@xxx.state.ne.us
FLastName@xxx.ne.gov
FLastName@xxx.state.ne.us

FLLLLLL@xxx.state.ne.us ,
where F is the first character of the first name,
LLLLLL is up to the first seven characters of the last name.

FLastName@xxx.state.ne.us,
where F is the first character of the first name,
LastName is the user full last name.

xxx can be any Division of Communications (DOC) approved identifier.

1.2 Similar Names:

When names are similar, distinguishing information should be added in the address book to the Middle Name field after the name is registered in Notes. The recommended information is either the Agency, Department, or City.

2.0 Purpose and Objectives:

2.1 Internet Address:

The internet address should clearly identify the recipient as a member of Nebraska State Government and what agency they work for.

2.2 Similar Names:

With thousands of users on the same system there are going to be several users with similar names. As a result, sometimes critical/confidential e-mail is addressed to the wrong individual.

3.0 Definitions

NA

4.0 Applicability

This guideline applies to all state government agencies, except Higher Education. Adherence to guidelines is voluntary.

5.0 Responsibility

Agencies utilizing Lotus Notes.

6.0 Related Policies, Standards and Guidelines

NA

Nebraska Information Technology Commission

STANDARDS AND GUIDELINES

Identity and Access Management Standard for State Government Agencies

Category	**Security Architecture**
Title	**Identity and Access Management Standard for State Government Agencies.**
Number	

Applicability

☑ **State Government Agencies, excluding** Higher Education; and agencies receiving an exemption pursuant to Section 4.2……..... **Standard**
☐ **State Government Agencies,** all .....**Not Applicable**
☐ **State Funded Entities -** All entities receiving state funding for matters covered by this document.....**Not Applicable**
☐ **Other: _____** .....**Not Applicable**

Definitions:
Standard - Adherence is required. Certain exceptions and conditions may appear in this document.
Guideline - Adherence is voluntary.

Status	☐ Adopted ☑ Draft ☐ Other:_____
Dates	Date: December 14, 2004 Date Adopted by NITC: Other: To be reviewed annually by the Technical Panel.

Authority: Neb. Rev. Stat. § 86-516(6)
http://www.nitc.state.ne.us/standards/

1.0 Standard:

All state government web applications that require authentication and authorization of users will utilize the enterprise directory, known as Nebraska Directory Services.

2.0 Purpose and Objectives:

The purpose of this standard is to provide an enterprise solution for identity and access management capabilities to reduce security administration costs, ensure regulatory compliance, and increase operation efficiency and effectiveness. This standard focuses on web applications, because most if not all new applications will utilize web technology. To incorporate non-web applications into the Nebraska Directory Services would require additional cost and different policies to implement.

Objectives include:

- Build an identity-based portal that can integrate disparate applications, enable secure web access to applications and data, and enable users to access applications from their offices or remote locations.
- Implement a standardized, secure identify and access management architecture that provides centralized management with local administration of users, centralized user identity information, synchronized user identity information across multiple applications (where appropriate), and application-level authentication and authorization based on the unique identity of the user (as opposed to a shared logon ID).
- Use standards-based technology to ease application integration, provide for reuse of components and remain adaptable in the face of changing technology products.
- Ensure a solution that is scalable to meet the current and future needs of state agencies, their employees, clients and customers, and business partners.
- Meet federal security requirements for identity and access management, including HIPAA and NCIC security regulations.
- Provide a high level of security including the option of two-factor identification.

3.0 Definitions:

3.1 Authentication – The process of uniquely identifying an individual. Authentication ensures that the individual is who he or she claims to be, but says nothing about the access rights of the individual.

3.2 Authorization – The process of giving individuals access to system objects based on their identity which allows them to add, update, delete or view information for a web application.

3.3 Identify and Access Management – Enterprise Identity Management is a system of technologies, business practices, laws and policies that manages common identification of user objects; reduce the costs while enhancing the quality of government services; protects the integrity of state resources; and safeguards the privacy of the individual.

3.4 LDAP – LDAP (Lightweight Directory Access Protocol) is an Internet protocol that applications use to look up user information from a server, such as Novell's eDirectory.

3.5 Web Applications – Web server based applications that are accessed using a web browser. This definition includes custom developed systems and third party software systems.

4.0 Applicability

4.1 State Government Agencies

This standard applies to all state government agencies, boards, and commissions, except Higher Education and those agencies receiving an exemption under Section 4.2.

4.1.1 State Agencies, Boards, and Commissions

All new web applications requiring authentication and authorization of individuals must comply with the standard listed in Section 1.0. All existing web applications requiring authentication and authorization must convert to the standard listed in Section 1.0 as soon as fiscally prudent or upon an upgrade to the web application, whichever comes first, unless the application is exempt.

4.2 Exemption

Exemptions may be granted by the Technical Panel of the NITC upon request by an agency.

4.2.1 Exemption Process

Any agency may request an exemption from this standard by submitting a "Request for Exemption" to the Technical Panel of the NITC. Requests should state the reason for the exemption. Reasons for an exemption include, but are not limited to: statutory exclusion; federal government requirements; or financial hardship. Requests may be submitted to the Office of the CIO via e-mail or letter (Office of the CIO, 521 S 14th Street, Suite 301, Lincoln, NE 68508). The Technical Panel will consider the request and grant or deny the exemption. A denial of an exemption by the Technical Panel may be appealed to the NITC.

5.0 Responsibility

5.1 IMServices

IMServices will incorporate the needed hardware and software into their infrastructure to provide the following:

- LDAP directory for user /entity objects.
- Role-based authentication and authorization to the enterprise LDAP directory and applicable applications for registered users.
- Business/disaster recovery.
- Authentication methods available:
    - User ID and password
    - Two-factor authentication
    - X.509 certificates

5.2 State Agencies, Boards and Commissions

Agencies, Boards and Commissions will carry out the following responsibilities:

- Web applications requiring authentication and authorization must comply with the standard listed in Section 1.0.
- Require this standard be referenced in all RFPs (Requests for Purchase) for web applications covered by this standard.

5.3 State Government Council Directory Services Workgroup

The State Government Council's Directory Services Workgroup will provide ongoing advice and direction, including but not limited to:

- Policies for implementation;
- Benchmarks and service level agreements;
- Funding options.

6.0 Related Policies, Standards and Guidelines

- NITC Information Security Management Policy – January 23, 2001
- NITC Access Control Policy – January 23, 2001
- NITC Network Security Policy – January 23, 2001
- State Government Council's Directory Services Workgroup Phase I recommendation – July 30, 2003

DRAFT

Converting distance learning networks to a high bandwidth, flexible infrastructure

A White Paper
by the Staff of the Nebraska Information Technology Commission
and the Collaborative Aggregation Partnership (CAP)

December 10, 2004
(Revised March 7, 2005)

Table of Contents

INTRODUCTION

The staff of the Nebraska Information Technology Commission and the members of the Collaborative Aggregation Partnership (CAP) have drafted this white paper in an attempt to communicate the history, challenges and future facing a majority of Nebraska's distance learning consortia as they approach the end of their distance learning contracts. This white paper will suggest an upgrade plan and sustainable networking topology that will rely upon cooperation among K-12 districts, ESUs, higher education partners, and selected agencies of the State of Nebraska. The goal of this project is to upgrade existing video and data circuits and connect them into a high bandwidth, wide area network that will allow for a variety of asynchronous and synchronous distance learning applications and other education-related services to be delivered to the state's public high schools and their ESU, informal education and higher education partners. Although this white paper primarily focuses on the interoperability needs of the high schools and colleges using JPEG and MPEG2 video compression technology, the statewide education network would eventually serve every school building, district, and college.

Key assumptions include:

- That upgrading all 180 JPEG sites to H.264 video within a finite length of time (July 2006-August 2008), regardless of their original contract termination date, would be advantageous;
- That the capital investment for H.264 codecs and school/aggregation routing equipment comes from state, federal, or foundation funding sources and that the recurring revenue amount is roughly equivalent to the amount prior to conversion;
- That converting a commercial video data service (JPEG + T-1 data) to a high bandwidth (45Mbps or greater), flexible use network where the school or regional aggregation center would be responsible for their choice of applications and apportioned bandwidth would be advantageous;
- That maintaining the monthly recurring costs for the schools' flexible use, high bandwidth (45Mbps or greater) network services at a cost similar to the current statewide average ($1325/month--video + $216/month--T1 data = $1541/month) would be advantageous;
- That proliferating the IP videoconferencing applications to elementary schools and middle schools, and the ability to interconnect schools with higher education, health care, Internet2 entities outside Nebraska, and other state agencies would be advantageous;
- That preserving the existing programmatic relationships between schools already using video distance learning and to convert the infrastructure to a flexibly provisioned data network capable of serving emerging technology applications would be beneficial;
- That using Network Nebraska, the statewide multi-purpose telecommunications backbone, to the fullest extent possible; delivering Internet1, Internet2, streaming video, IP videoconferencing, and secure data transfer to participating entities and/or groups of participating entities would be beneficial;
- That the level and amount of involvement and intervention by selected state agencies and Network Nebraska to reach the solution described will largely be determined by the local

school districts, educational service units, distance learning consortia, and Legislature, upon mutual agreement by the affected state agencies.

BACKGROUND

Beginning in 1992, groups of Nebraska school districts began organizing themselves into eleven consortia for the purpose of delivering distance learning classes using interactive videoconferencing, mainly to high school classrooms. With the addition of one new consortium in 2002, 12 regional distance education consortia in Nebraska now provide video and data services to approximately 270 school districts. The number of school districts within each consortium ranges in number from six (6) to 72. The consortia combined local funds with state and federal grant funds to establish video distance learning, with an obligation to pay recurring costs over the life of 10-year contracts with telecommunications providers. The consortia are independent entities organized under inter-local agreements by participating school districts. Each has its own board of directors and distance learning director, acting as an executive officer. The distance learning directors' salaries are paid all, or in part, by the participating school districts or co-located Educational Service Unit.

The initial investment to build the distance education networks included about $17.5 million of state lottery funds and federal funding. The Legislature, as recently as 2001, appropriated an additional $3 million of state lottery funds to complete the system by adding another 44 school districts. Together, the 12 regional consortia spend over $3 million per year for video service contracts with providers. These costs average approximately $1325 per school district per month for the video service, ranging from $900 per month to $1800 per month.

Beginning with the fall semester of 2006 the original video service contracts for the distance learning consortia will start to expire. By August 2006, the contracts of the Southwest Nebraska Distance Learning Consortium and the Niobrara Valley TelePartnership will end, affecting 55 sites. Another seven distance learning consortia service contracts will expire through 2010, affecting 125 more sites. The 21 districts served with MPEG2 technology in the Crossroads Distance Education Consortium and Sandhills Technology Education Partnership already have ATM (asynchronous transfer mode) technology. An early technical assessment is that each of these 21 schools will need one codec card to upgrade their systems to compatibility with H.263/H.264 video technology. The 111 K-12 sites that have H.263/H.264 video over 100 Mbps cable-provided circuits are already upgraded. [See Appendix #3]

Currently, the 12 consortia utilize three different video technologies and are not able to provide interconnectivity between consortia. Nine telephone company-provided, JPEG consortia comprise 152 high schools and 28 ESU, higher education and informal education partners. All of these contracts for 45 Mbps (DS-3) circuits are due to expire between 2006 and 2010, with no replacement or upgrade funding models in place. Two telephone company-provided, MPEG2 consortia comprise 21 sites using 45 Mbps ATM infrastructure with contracts not due to expire until 2012. Each of these 21 sites will presumably need an H.264 codec card inserted into their video compression device to assure their interoperability with the other distance learning high schools. A cable company-provided consortium of 67 school districts in southeast Nebraska, 21

other cable-based schools near Kearney, and eight Lincoln Public Schools sites have already upgraded to H.263/H.264 video technology using 100Mbps or 1000Mbps full duplex circuits. Also, almost every school district with JPEG or MPEG2 video service and educational service units are purchasing from 1.5Mbps to 3.0Mbps of Internet access over these same circuits for an additional monthly charge.

The distance learning consortia offer a total of more than 600 classes per year, providing over 6,000 students and 2,300 adult learners with coursework including such subjects as foreign language, social sciences, mathematics, language arts, agriculture, and natural science. For rural Nebraska, especially, video distance learning is a key strategy for offsetting teacher shortages in certain subjects, offering advanced classes, and even providing elements of the core curriculum in order to maintain accreditation. The current distance learning systems concentrate on offering high school and college credit classes mainly to high school juniors and seniors, affecting nearly 10% of the students of this age group across the state, who opt to take video distance learning classes.

Distance learning holds even greater potential in the future with an integrated statewide system. A statewide synchronous video system would expand the opportunities for sharing classes among more schools across the State and allow much greater access to the instructional resources from higher education institutions. A statewide synchronous video system that is integrated with digital media and high bandwidth access to Internet1 and Internet2 would open up a wealth of educational resources across the state and from the nation and world. The flexible bandwidth of the resulting network would allow teachers to download digital video clips to supplement daily lessons, access streaming video, and conduct interactive videoconferencing with experts and scientists from across the globe with minimal prior planning. The teachers would also be able to participate in virtual field trips to distant sites (e.g. Smithsonian Institution, Mt. St. Helen's), gain access to web-based eLearning resources, and conduct videoconferences between groups of students from all over the United States. [See Appendix #1]

SWOC ANALYSIS

Strengths of the Existing Distance Learning Consortia Arrangement

The strengths most often associated with the existing distance learning consortia are:

- Fiber optic cable was installed from telecommunications service providers into a majority of the State's K-12 school districts;
- Commercial video/data service contracts and interlocal agreements were pioneered;
- Local funds, combined with state and federal grants, were procured to purchase and install distance learning equipment and infrastructure;
- High-quality video distance education has been delivered to schools on a reliable basis;
- Cooperation and interdependence are highly developed among participating school districts;
- Quality teaching resources have been shared with schools that would not otherwise be able to hire highly qualified teachers.

Weaknesses of the Existing Distance Learning Consortia Arrangement

The weaknesses most often associated with the existing distance learning consortia are:

- Course exchange is localized rather than regionalized or statewide, and prospective higher ed partners have some difficulty reaching schools within their service areas;
- The bartering or trading of classes between schools fails to incentivize larger, self-sufficient, or more progressive districts to offer synchronous or asynchronous learning opportunities;
- Most bell schedules and school calendars of schools involved in synchronous video instruction remain unsynchronized, thereby sacrificing precious instructional minutes;
- Several consortia boundaries and sizes do not correspond with any other political subdivision or management structure and fail to take advantage of economies of scale available through regionalization;
- In most consortia, existing technology fails to take full advantage of the bandwidth available to schools;
- Most consortia did not create a locally sustainable funding plan for upgrade and replacement at the outset of their original contract relationships.

Opportunities facing the Existing Distance Learning Consortia Arrangement

The opportunities most often associated with the future distance learning relationships are:

- The ability to develop regional education cooperatives that enable learners to accomplish seamless transfer between high school and college, and empowering administrators to procure all the educational opportunities needed within the cooperative;
- The ability to connect additional schools or groups of schools to Network Nebraska for intrastate and interstate connectivity as well as cost savings from lower priced Internet and access to Internet2;
- The ability to provide a common central scheduling or asset management software to streamline the process for reserving and activating video classrooms;
- The ability to enter into contracts that would provide flexible use of the existing bandwidth, capable of supporting multiple data services (including videoconferencing, streaming video, Internet1, Internet2 and other types of digital traffic) at the discretion of end users;
- The ability to regionalize future resource allocation, technical support, network management, and load balancing of Internet bandwidth [See Appendix #2];
- The ability to maximize the use of eLearning management software and digital media resources to augment synchronous video instruction.

Challenges facing the Existing Distance Learning Consortia Arrangement

The challenges most often associated with the present distance learning consortia are:

- Current JPEG technology in nine consortia serving 180 K-12 and higher education sites operates at a very high bandwidth, is obsolete and inefficient, and will likely suffer increased down time due to equipment failure before existing contracts expire;
- Providers have indicated that there may be major price increases when the existing 10-year video service contracts expire in the nine consortia using JPEG technology;
- Current network topology limits schools using JPEG or MPEG2 technology to just one class at a time, with only a very small capacity available for Internet1 and Internet2;

- Upgrading to new technology that makes more efficient use of network bandwidth involves considerable capital investment;
- Incompatible video technologies and the lack of interconnections among distance learning consortia limit the sharing of classes to those schools within each regional consortium;
- Spreading IP videoconferencing technology to more elementary and middle schools and allowing it to proliferate within high schools will involve building LAN upgrades as well as campus infrastructure upgrades.

STATEWIDE SYNCHRONOUS VIDEO NETWORK

Current Status

The NITC has been working on the concept of a statewide synchronous video network since 1999. In fact, part of the Legislature's concern that led to formation of the NITC was the choice of incompatible technologies in some of the distance learning consortia. Originally, this was a problem of analog vs. digital technologies. Now it is a problem of incompatible JPEG, MPEG2, and H.263/H.264 video protocols. Through the efforts of the NITC and its work groups, the following steps have been taken to move Nebraska closer to the vision of a statewide system:

- NITC Video Compression Standards, February 2002 (moved Nebraska from four video standards to two);
- NITC Video Compression Standards, September 2004 (moved Nebraska from two video standards to one);
- The Statewide Synchronous Video Work Group, composed of K-12, higher education, state agencies, telehealth, and informal education, has met five times to further the goal of interoperability through implementation of the NITC video standards and discussion of related upgrade issues;
- NITC Synchronous Video Network Strategic Initiative / Strategic Plan;
- Special request to Congressman Osborne to obtain $9.8 million for upgrade of the synchronous video network;
- NITC prioritization of the NDE Distance Learning: Infrastructure, Programming and Training Budget Request as one of five key I.T. projects to the Governor and Legislature;
- Facilitating the November 5, 2004 meeting with distance learning consortia directors and telecommunications vendors to discuss networking options;
- Development of this white paper to help describe the technology, implementation, and management of a high bandwidth, wide area network that will allow for a variety of asynchronous and synchronous distance learning applications and services to be delivered to numerous education entities; and
- Numerous meetings and briefings with involved entities to describe the elements of the project.

Currently (2-23-05), LB 689, sponsored by Senator Stuhr, with Education Committee Amendment 403 is on General File and due to be discussed on the floor of the Legislature. This bill:

- Creates the Distance Education Enhancement Task Force and names membership by 6/15/05:

    - Chair of the Education Committee (chair of the Task Force)
    - Chair of the Transportation and Telecommunications Committee
    - Chair of the Appropriations Committee
    - Two representatives from Educational Service Units
    - Two representatives from distance education consortia
    - One principal or superintendent
    - One representative from the Nebraska Department of Education (infrastructure)
    - One representative from the Nebraska Public Service Commission
    - One representative from the Nebraska Information Technology Commission
    - One representative from the Nebraska Educational Telecommunications Commission
    - One representative from the coordinating commission for postsecondary education
    - One representative from state colleges
    - One representative from community colleges
    - One representative from the University of Nebraska
    - One representative of the Governor
- Requires a report by the Task Force by December 31, 2005 to include recommendations to:
    - develop broadband, scalable telecommunications structure for use in distance learning classrooms
    - develop an IP-based network to connect all existing and future distance learning and videoconferencing facilities
    - upgrade telecommunications equipment
    - provide training and support programs for educators in the development and use of distance learning
    - transfer distance education coordination responsibilities from distance education consortia to ESUs
    - provide for statewide coordination for distance education offerings
    - identify potential funding sources
    - establish an equitable and affordable financing system for equipment and usage
    - establishes a system that allows districts to purchase distance education offerings
    - establish statewide provision of other technology-based services
- Includes an intent to fund $10 million in FY 06, FY 07, FY 08

Future Options

Three options are being considered.

1) **Each consortium determines its** own upgrade path with no State assistance. The distance learning consortia are independent entities that can renegotiate their own rates, terms and conditions. If they comply with the NITC video standards, they would be able to establish connections to Network Nebraska or other consortia in the future in order to exchange classes or other content. The downside to this option is the risk that without aggregated or volume bidding, the overall costs may be greater than through a collective bargaining process that aggregates contracts. Another risk is that consortia will respond to higher rates by reducing the amount of bandwidth, which restricts the future potential uses of their networks. Individual school districts may respond to higher rates by reducing total bandwidth to the

next most affordable threshold (two or three T-1 data circuits; 3-4.5 Mbps). Full tariff networking costs, including technology upgrade for synchronous video, for the affected sites in the nine JPEG consortia have been estimated by providers to be $46 million over seven years of a new contract, as compared to $30 million over 10 years of the existing contracts. Existing sources of funding, such as federal e-rate monies and an average payment of $1541 per month from each high school, would cover some but not all of the $46 million, leaving an estimated $33 million in upfront costs for equipment and networking. Individual consortia would be free to apply for competitive USDA-RUS grants to help assist with each upgrade although each grant has a limit of $500,000. Without any decrease in projected costs through negotiated bids or any financial support from outside sources, the estimated monthly recurring costs (before E-Rate) on the $55 million project for each site would be $4,020/month for 84 months. [See Network Funding Scenario #1]

2) Establish a statewide contract with no State funding assistance. Consortia have discussed having Network Nebraska (Collaborative Aggregation Partnership) act as a prime contractor to assist them in negotiating a replacement topology and achieving better cost-savings on service contracts. This would presumably help to attain lower project costs and achieve an integrated, statewide system within a much shorter time frame. It could lead to additional connections to Network Nebraska and further aggregation of Internet purchasing. Yet, without outside funding such as a Congressional appropriation or additional lottery funds, neither the upfront nor the recurring costs would be affordable for many districts. This would further delay the infrastructure necessary to deliver the program elements of an essential Nebraska education. Besides non-participating schools, other excluded features would include scheduling software and transport costs to participate in Network Nebraska. Negotiation of a statewide contract would likely reduce the estimated network and synchronous video upgrade costs (over Option 1) to the affected schools but still could result in a recurring cost that is unaffordable to many schools. [See Network Funding Scenario #2]

3) Establish a statewide contract with additional funding for a statewide system. A central contract would lower costs through increased competition and access to technical expertise during contract negotiations. A central contract would provide a technical design that supports a statewide system and enables the service contracts of schools to be co-terminus for future funding upgrades and renegotiation purposes. Additional funding would help to keep overall costs affordable for all districts, create more flexibility for their existing bandwidth, and insure their participation in Network Nebraska. The estimated cost of this option is:
   - $9.3 million one-time costs to replace video codecs, add switches and routers to the school sites, and additional aggregation routers in each region;
   - An undetermined amount of upfront "buydown" costs that enable the 84-month, recurring costs to be affordable to participating schools;
   - Approximately $1.5 million per year ongoing costs to offset the Internet transport and backbone costs so that each school will have equitable access to Internet resources;
   - Approximately $2 million one-time costs to assist with critical local area network (LAN) upgrades for schools, on an as-needed basis;
   - Approximately $1.5 million to obtain a statewide scheduling/management system for synchronous video distance learning and videoconferencing;
   - Approximately $200,000 ongoing costs for training and support.

Option 3 contains all the advantages of Option 2 with additional upfront and ongoing support to make the network system affordable to the participating schools. [See Network Funding Scenario #3]

Recommended Approach

The third option of Establishing a statewide contract with additional funding is the only one that will insure a comprehensive, integrated, statewide system with the greatest number of schools involved.

Successful upgrade of the wide area network affecting 180 sites would ensure that technology could continue to play a major role in the delivery of educational services and content for the next seven years and beyond. As schools begin to exhaust the 45 Mbps bandwidth, new networking options could be explored and contracted at that point. Failure to upgrade would almost certainly "sentence" a great number of schools to the absolute minimum of Internet access, without the ability to access the software and data applications needed to deliver the essential elements of a Nebraska education.

RISK ASSESSMENT

The infrastructure upgrades described thus far in this white paper would replace the aging synchronous video technologies destined for contract expiration starting in 2006 and retrofit the present high bandwidth circuits for flexible data usage. The IP video technology upgrades and wide area, high bandwidth networking would greatly increase the number and variety of educational technology applications and Internet access available to schools. The resulting statewide education network would allow for statewide coordination of applications, more secure transport of data, and a more strategic approach to technical support and management. It is evident that some type of additional funding beyond local recurring contributions would be necessary to accomplish the network upgrade. If no funding becomes available, there are a variety of possible scenarios:

- School districts, unable to complete the high bandwidth circuit retrofit, would reduce their connectivity from 45 Mbps (DS-3 circuit) to 1.5 or 3.0 Mbps (one or two T-1 circuits) for the same monthly cost. They could eliminate their synchronous video exchange in favor of an Internet access of 1.5 or 3.0 Mbps (one or two T-1 circuits);
- School districts, unable to complete the high bandwidth circuit retrofit, would reduce their connectivity from 45 Mbps (DS-3 circuit) to 1.5 or 3.0 Mbps (one or two T-1 circuits) for the same monthly cost. Multipoint videoconferencing would decrease to 384 Kbps per channel and Internet access would be restricted to all or part of 1.5 Mbps (one T-1 circuit);
- School districts, either individually or as groups, could opt to increase their monthly recurring costs by 260% and apply for some grants to amortize the high bandwidth circuit retrofit and JPEG technology upgrades over 84 months. This scenario would have school districts or consortia of school districts contracting with telecommunication providers for services on a local basis. This increased monthly cost scenario would likely result in many

school districts either disconnecting or greatly reducing their telecommunications potential. It would also greatly delay the goal of establishing a statewide network that allows for a variety of asynchronous and synchronous distance learning applications and other education-related services to be delivered to the state's public high schools and their ESU, informal education and higher education partners.

NETWORK UPGRADE PLAN

The Network Upgrade Plan includes a proposed timeline of events, a discussion of the roles of the involved entities, and a possible funding portfolio to accomplish the project.

Proposed Timeline of Events

1. December 10, 2004: The first draft of the white paper is distributed to affected entities.
2. December 10, 2004-February 18, 2005: Input and recommended revisions to this white paper are received from the distance learning consortia, ESU-NOC committee, higher education and informal education partners, and the Statewide Synchronous Video Network Work Group as well as from the consortium boards and member schools.
3. February 18-February 25, 2005: The staff of the NITC revise the white paper.
4. March 8, 2005: The NITC Technical Panel recommends the white paper as important background information to accomplishing a wide area, high bandwidth, flexibly provisioned network capable of delivering a number of services to Nebraska education entities.
5. March 15, 2005: The NITC recommends the white paper as important background material to the Distance Education Enhancement Task Force, if created by LB 689, as the members discuss the creation of a wide area, high bandwidth, flexibly provisioned network capable of delivering a number of services to Nebraska education entities.
5. March 15-June 3, 2005: LB 689 is monitored as it moves through the legislative process. Named agencies and organizations respond if asked for membership suggestions for the Distance Education Enhancement Task Force.

   ********** Timeline events 6-8 dependent upon passage of LB 689 **********

6. June 15-December 31, 2005: The Distance Education Enhancement Task Force meets to formulate recommendations to upgrade and coordinate distance education.
7. December 31, 2005: The Distance Education Enhancement Task Force submits its improvement plan to upgrade and coordinate distance education in Nebraska. The report shall include recommendations for policies and potential legislation to the Clerk of the Legislature.
8. January-April, 2006 Pending the recommendations of the Distance Education Enhancement Task Force, the Legislature considers additional funding support for the distance education enhancement project.

   ***** All remaining events and the accompanying timeline are purely hypothetical and are provided in an attempt to demonstrate the feasibility of the overall project *****

9. May, 2006: Pending the funding and policy recommendations of the Legislature, the DAS-Division of Communications, in partnership with CAP, ESUs, and distance learning consortia, construct and release an RFP and bid process that provides for a master purchasing contract for wide area, high bandwidth, flexibly provisioned network circuits to all affected entities.
10. Date Uncertain: Bids are awarded by DAS-Division of Communications for a master purchasing contract for 180 45 Mbps or greater tail circuits that will be activated from 2006-08.
11. November-December, 2005: First wave of school districts file e-Rate form 471s for "Telecommunications" from the Network Nebraska master contract, effective July 1, 2006.
12. May-August, 2006: The first wave of H.264 codecs, building routers, and aggregation routers are installed in K-12 and higher education sites, with DS-3 upgrades occurring from July 1-August 15, 2006.
13. July-August, 2006: Twenty-one H.264 cards are installed in the Mac500 codecs of the Sandhills Technology Education Partnership schools and the Crossroads Consortium schools.
14. November-December, 2006: Second wave of school districts file e-Rate form 471s for "Telecommunications" from the Network Nebraska master contract, effective July 1, 2007.
15. May-August, 2007: The second wave of H.264 codecs, building routers, and aggregation routers are installed in K-12 and higher education sites, with DS-3 upgrades occurring from July 1-August 15, 2007.
16. September 1, 2007: Over 300 education sites are united by a high bandwidth, wide area network, capable of point-to-point and point-to-multipoint IP videoconferencing, between schools and from schools to other entities.

Roles of the Involved Entities

The **Local Education Agency** (LEA) [e.g. school, ESU, college] is the end-user of the services and bandwidth available over the network. Currently, each school, ESU, or college maintains its own technical support staff. The level of support ranges from volunteer or stipended part time staff in smaller schools to multiple full-time staff in larger schools, ESUs and college campus network operations centers. Responsibilities of the LEA under the wide area, flexibly provisioned, high bandwidth network would include maintaining a secure Local Area Network (LAN) extending to the Ethernet port on the router, including but not limited to effective virus protection, current Operating Systems with updates on all devices, properly licensed software, uninterruptible power supplies, and device security. The LEA would also maintain its own videoconferencing and distance learning equipment or contract for maintenance on the equipment. The LEA would also own and maintain its building router using contracted vendor maintenance. The maintenance would include a current operating system, up-to-date access lists, appropriate reflective access lists, and redundancy of core devices to the extent possible. The LEAs would have representation on the Network Nebraska Advisory Group (NNAG).

The **Distance Learning Consortia** (DLC) directors currently function as schedulers, troubleshooters, eRate specialists, program developers, and the member schools' technical and contract liaisons to the telecommunication service providers. As the wide area network upgrade is phased in, DLC directors would be responsible for developing training materials on the new IP video technology for school district staff and teachers. DLC directors would also help: Develop specifications and guidelines for the provisioning of a statewide asset management system for monitoring of videoconferencing facilities; develop specifications and guidelines for a web-based event clearinghouse of educational programs and opportunities; and guide schools with the purchase and deployment of additional IP video devices. The DLC directors would become coordinators of digital content, operating as the programmatic representatives for area schools. The DLC directors would have representation on the Network Nebraska Advisory Group (NNAG).

The **Educational Service Unit—Regional Network Operations Centers** (ESU-RNOC), once established, would be the interfaces between the high bandwidth, wide area networks serving the LEAs and the Network Nebraska backbone. Currently, the ESU network operations staff individually assist with such services as e-mail, Internet filtering, network security, technical troubleshooting, and hardware and software applications. As the ESU-NROCs are established, the regional ESUs and colleges could opt to leverage existing staff expertise and hire new expertise to manage and maintain regional services. Although there would likely be some regional aggregation of servers and routers, these devices would be able to be managed remotely. The ESU-RNOCs would extend service contracts to LEAs to help manage their bandwidth and resolve issues related to Network Nebraska usage. The ESU-RNOCs would manage wide area network bandwidth usage/traffic within their regional aggregation. The ESU-RNOCs would manage/limit bandwidth usage/traffic when leaving the regional aggregations to traverse Network Nebraska. The ESU-RNOC would reserve the right to correct any network activity which compromises or potentially compromises the regional wide area network or Network Nebraska through insecure or illegal network use as well as non-educational or inappropriate network use. The ESU-RNOCs would provide consultation and support to LEAs as mutually agreed. The ESU-NROCs would assure compliance with all contractual terms and conditions related to access and transmission on Network Nebraska. The ESU-RNOCs would have representation on the Network Nebraska Advisory Group (NNAG).

The **University of Nebraska Computing Services Network** (UNCSN) would be the main contact between the ESU-NROCs and the service providers. The staff of the UNCSN would receive requests for service and convert them into service orders, helping to insure that the requirements of the customer are being met by the primary and secondary providers. The UNCSN would be the aggregator of Internet demand and purchaser of Internet service for the public entities who opt for this service through Network Nebraska. The UNCSN would also handle the routing of traffic to Internet2 among eligible entities. The UNCSN would staff the Level 2 Network Operations Center for education entities on Network Nebraska. The UNCSN would host the Network Nebraska website, www.networknebraska.net. The UNCSN would participate in the Network Nebraska Advisory Group (NNAG).

The **Department of Administrative Services—Division of Communications** (DAS-DOC) would be the main author of the Request for Proposal (RFP), with input and specifications

provided by the DLCs and ESUs. The DAS-DOC would negotiate the master purchase contract, allowing school districts and colleges or groups of school districts and colleges, to purchase services from the master purchasing contract. These services would include Internet access and/or transport from the major nodes (Norfolk, Omaha, Lincoln, Grand Island, Kearney, North Platte, Scottsbluff) of the statewide network and 45Mbps or greater transport through high bandwidth, wide area networking circuits on a regional basis. The DAS-DOC would charge an administrative fee to end users or groups of end users for use of its services. This administrative fee is regulated by the Federal government and must be the same fee charged to any DAS-DOC customer; local, state, or Federal. The administrative fee is currently set at 10% and includes the services of network management, network troubleshooting, network aggregation, consolidated billing, and contract negotiation. The DAS-DOC would participate in the Network Nebraska Advisory Group (NNAG).

Nebraska Educational Telecommunications (NET) would staff the Level 1 help desk and Network Information Center for Network Nebraska, answering the 1-888-NET-NEBR (888-638-6327) toll-free number. NET staff would assist with the master purchase of the building codec, switching and router equipment as well as consulting on room integration issues. NET would be a likely provider of digital content over the terrestrial and satellite transmitter network. NET would participate in the Network Nebraska Advisory Group (NNAG).

The **Nebraska Information Technology Commission** (NITC) would act as a facilitator of the process, providing staff assistance as needed to arrange and hold meetings, build consensus, draft documents, communicate with involved entities, and provide briefings to potential users, stakeholders, providers, and policy makers. The Legislature created the NITC to guide the State's investments in information technology. The NITC Technical Panel has recommended video compression protocol standards to accomplish a statewide synchronous videoconferencing network and can respond to subsequent requests for other networking standards. The NITC would provide staff support for, and participate in, the Network Nebraska Advisory Group (NNAG).

The **Nebraska Department of Education** (NDE) would offer policy and programmatic guidance to make sure that the resulting network capacity and videoconferencing system would be able to offer enough educational opportunities for schools to deliver the elements of an essential Nebraska education, as described by the State Board of Education. The NDE would take the State lead on helping to secure funding to make the project feasible. NDE would offer policy and funding guidance on matters related to E-Rate eligibility. The NDE would participate in the Network Nebraska Advisory Group (NNAG).

The **Nebraska Public Service Commission** (PSC) would offer policy guidance and consultation to make sure that the services and pricing offered by the telecommunications providers comply with the PSC telecommunications rules and regulations. The role of the PSC is to make sure that every available service and pricing alternative is being considered by the industry in order to improve the project affordability for Nebraska schools. The PSC would participate in the Network Nebraska Advisory Group (NNAG).

The **Network Nebraska Advisory Group** (NNAG) would provide the conduit for LEAs, DLC directors, and ESU-NROC staff to provide input to Network Nebraska and the members of the Collaborative Aggregation Partnership. Quarterly face-to-face or videoconferencing meetings would be held to discuss upcoming events, issues, and performance of the network. Membership would be open to any end-user or customer of Network Nebraska. The NITC would charter the Network Nebraska Advisory Group with a list of responsibilities and duties.

Funding Portfolio

Providing a feasible funding portfolio is a critically important piece of this project. However, many variables cannot be defined at this juncture. The actual and eventual costs of equipment and networking cannot be known without performing a bid process. So, scenarios can only be presented at this time based upon the industry's best estimates.

Notes: Site router and switches, H.263/H.264 codec and scheduling software are likely to be ineligible for E-Rate reimbursement unless included in a service product from telecommunications providers. If bid separately as equipment and software, these components would have to be paid for at the outset of the project or amortized over the life of the contract. Higher education and informal education partners are ineligible for E-Rate and state K-12 funding, therefore their upgrade costs must be taken into consideration.

The NDE budget adjustment document outlined project estimates for the equipment, maintenance, training, and management of the system. These numbers would vary considerably by the time of implementation, depending upon amortization and negotiation of a master purchase contract.

Sustainability

In most cases, the previous 10-year commercial video data service contracts of the DLCs failed to build in any escrow or funding to meet the future costs associated with equipment and technology upgrades at the culmination of the contracts. The next contracts for wide area, high bandwidth services must provide for some type of mechanism for funding technology upgrades at the end of the contract period.

Statewide Synchronous Video Network

Equipment Costs (as identified in the NDE Budget Adjustment request, 9-22-04)

Account Description by item	FY 06 Adj Req	FY 07 Adj Req	Est. Ongoing
School Site Router Hardware	$ 800,000	$ 800,000	$ 0
School Site Router Maintenance	$ 250,000	$ 250,000	$ 250,000
Aggregation Point Router Hardware	$ 1,300,000	$ 0	$ 0
Aggregation Router Maintenance	$ 200,000	$ 200,000	$ 200,000
School Site Codec Hardware	$ 1,500,000	$ 1,500,000	$ 0
School site Codec Maintenance	$ 200,000	$ 200,000	$ 200,000
Ancillary Equipment/LAN upgrades	$ 1,200,000	$ 1,700,000	$ 500,000
Scheduling/Management system	$ 745,000	$ 725,000	$ 350,000
Training and Support	$ 200,000	$ 200,000	$ 200,000
Subtotal	**$ 6,395,000**	**$ 5,575,000**	**$ 1,700,000**

Account Description by item	FY 06-07 Adj Req	Est. Ongoing	Responsibility
School Site Router Hardware	$ 1,600,000	$ 0	Outside Funds
School Site Router Maintenance	$ 500,000	$ 250,000	LEA
Aggregation Point Router Hardware	$ 1,300,000	$ 0	Outside Funds
Aggregation Router Maintenance	$ 400,000	$ 200,000	Network NE
School Site Codec Hardware	$ 3,000,000	$ 0	Outside Funds
School site Codec Maintenance	$ 400,000	$ 200,000	LEA
Ancillary Equipment/LAN upgrades	$ 2,900,000	$ 500,000	Outside Funds
Scheduling/Management system	$ 1,470,000	$ 350,000	Outside Funds
Training and Support	$ 400,000	$ 200,000	ESUs/DLC
Subtotal	**$11,970,000**	**$ 1,700,000**	

Account Description by Source	FY 06-07 Adj Req	Est. Ongoing
Outside Funds	$10,270,000	$ 850,000
Network Nebraska	$ 400,000	$ 200,000
Local Education Agencies	$ 900,000	$ 450,000 ($228/month/site)
ESUs/DLC Directors	$ 400,000	$ 200,000
Subtotal	**$11,970,000**	**$ 1,700,000**

Statewide Synchronous Video Network

Networking Costs (as estimated by telecommunications providers, September 2004)

Account Description by Service	Total Contract (7 yrs)
Qwest Network Price	$ 30,634,227
NIN Network Price	$ 15,400,000
Subtotal	**$ 46,034,227**

Network Funding Scenario #1 (assuming full estimated cost of network, $3342/month local contributions, no time value of money, with no buydown, and equipment paid for by others)

Account Description by Source	7yr Contract
Total Estimated Network Costs	$ 46,034,227
Est. Local Contribution Before E-Rate ($3342/mnth x 84 mnths x 164 sites) -	$ 46,034,227
Gap in Network Funding	$ 0

Network Funding Scenario #2 (assuming 20% discounted cost of network, $2673/month local contributions, no time value of money, with no buydown, and equipment paid for by others)

Account Description by Source	7yr Contract
Total Estimated Network Costs	$ 36,827,377
Est. Local Contribution Before E-Rate ($2673/mnth x 84 mnths x 164 sites) -	$ 36,827,377
Gap in Network Funding	$ 0

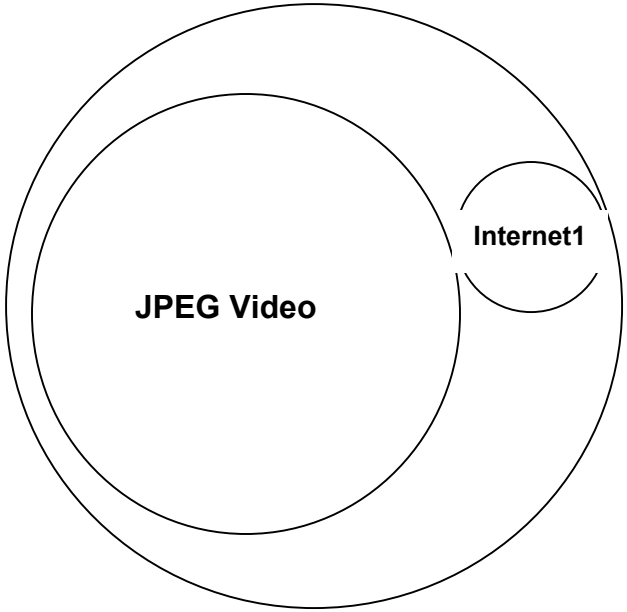
Network Funding Scenario #3 (assuming 20% discounted cost of network, $1541/month local contributions, leveraging time value of money, with buydown, and equipment paid for by others)

Account Description by Source	7yr Contract
Total Estimated Network Costs	$ 36,827,377
Est. Local Contribution Before E-Rate ($1541/mnth x 84 mnths x 164 sites) -	$ 21,228,816
Gap in Network Funding	$ 15,598,561
Credit for Time Value of Money (9% x 7 yrs = Future Value Factor of 1.8280)-	$ 7,065,431
Difference (Buydown)	$ 8,533,130

Difference (Buydown) would have to come from a combination of Local, State, and Federal sources.

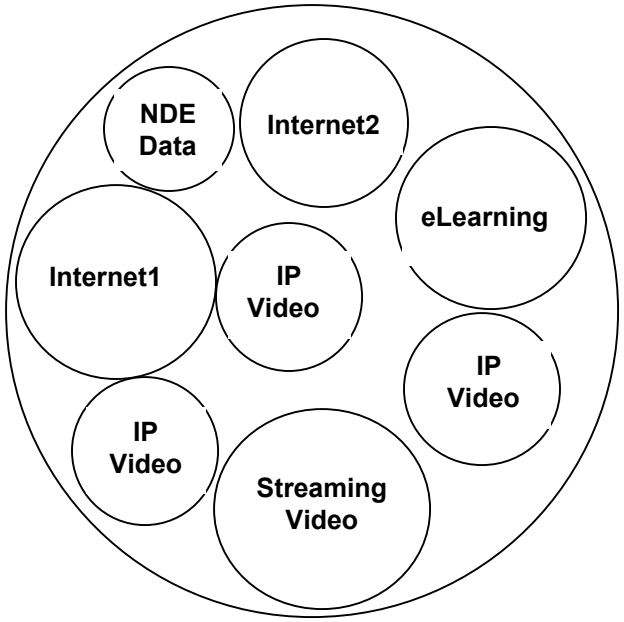
Appendix 1

45 megabit DS-3 fiber (old JPEG and T-1 Internet)



$1325/month JPEG video
$ 216/month T-1 Internet

45 megabit DS-3 fiber (new Flexible Use)



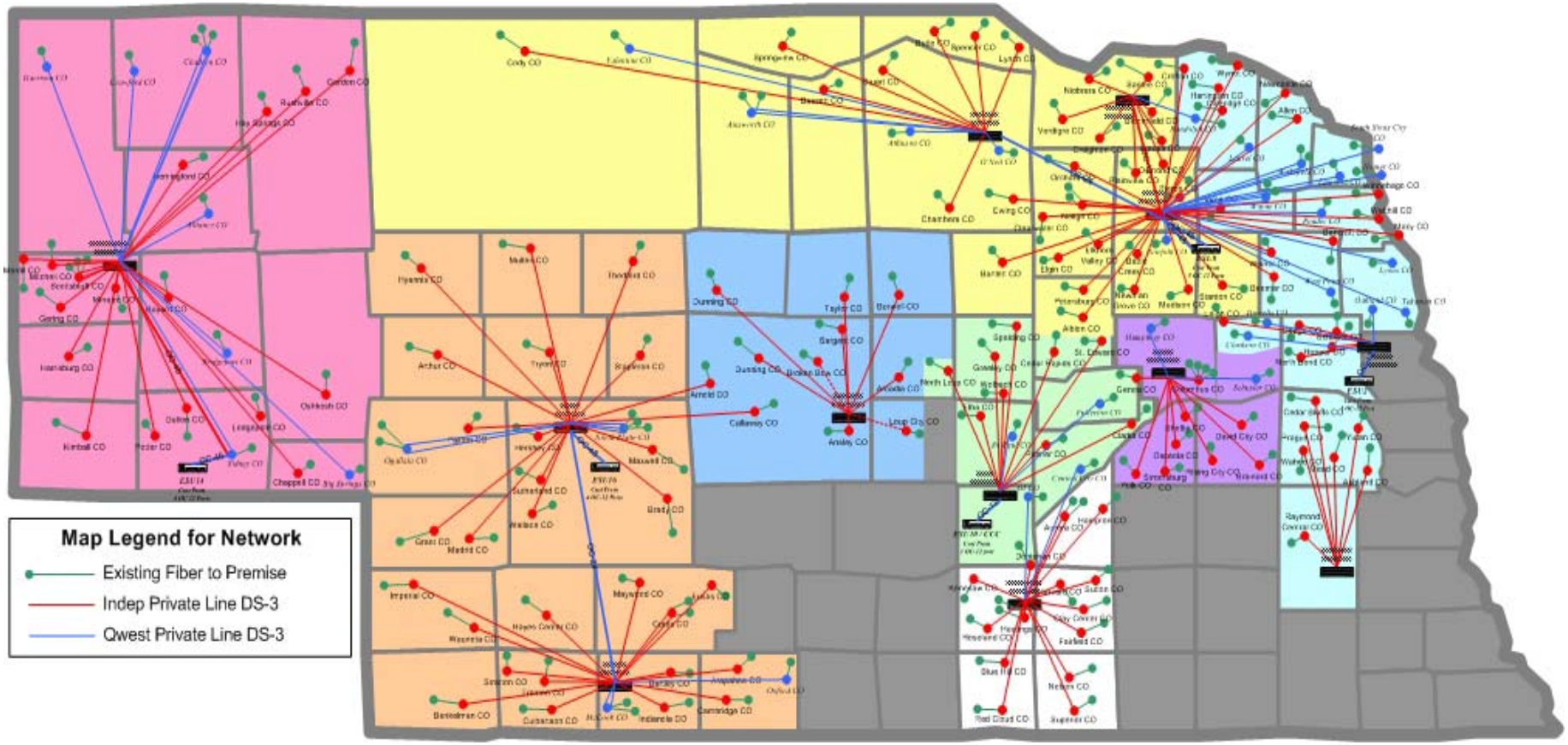
$1541/month full use of fiber capacity for IP Video, Internet1, Internet2, streaming video, eLearning, NDE data

Appendix 2

Technology Conversion for Nebraska Education Network

[Formerly the Distance Learning Network]

Nebraska's Telephone / Telecommunications Industry



High School or Community-School/School	Bandwidth	Video Protocol	ESU Area	Dist. Learning Consortium	Contract Expires	Community College Area
Aurora	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Aurora-Edgerton Explorit Center	45 Mbps	JPEG				Central CC
Blue Hill	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Central City	45 Mbps	JPEG	7	CNDEC	2008	Central CC
Clay Center	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Doniphan-Doniphan/Trumbull	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Fairfield-South Central Unified 5	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Hampton	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Harvard	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Hastings-Adams Central	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Hastings-Central Community College	45 Mbps	JPEG				Central CC
Hastings-ESU 9	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Kenesaw	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Nelson-South Central Unified 5	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Red Cloud	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Roseland-Silver Lake	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Superior-South Central NE Unified 5	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Sutton	45 Mbps	JPEG	9	CNDEC	2008	Central CC
Giltner (NO DL)	1.5 Mbps		9			Central CC
Hastings Senior High (NO DL)	11 Mbps		9			Central CC
Brainard-East Butler	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Columbus	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Columbus-Central Community College	45 Mbps	MPEG2	7			Central CC
Columbus-ESU 7	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Columbus-Lakeview	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
David City	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Genoa-Twin River H.S.	1.5 Mbps		7			Central CC
Humphrey	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Osceola	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Polk-High Plains	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Rising City	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Schuyler Central	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Shelby	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Stromsburg-Cross County	45 Mbps	MPEG2	7	Crossroads	2012	Central CC
Allen	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Ashland-Ashland/Greenwood	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Bancroft-Bancroft/Rosalie	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Cedar Bluffs	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Clarkson	45 Mbps	JPEG	7	ENDLC	2009	Central CC
Coleridge	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Crofton	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Dodge	45 Mbps	JPEG	2	ENDLC	2009	Metro CC
Emerson-Emerson/Hubbard	3 Mbps	H.264	1	ENDLC	2009	Northeast CC
Fremont (NO DL)	1.5 Mbps		2	ENDLC	2009	Metro CC
Fremont-ESU 2	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Hartington	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Homer	3 Mbps	H.264	1	ENDLC	2009	Northeast CC
Hooper-Logan View	45 Mbps	JPEG	2	ENDLC	2009	Metro CC
Howells	45 Mbps	JPEG	7	ENDLC	2009	Central CC
Laurel-Laurel/Concord	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Leigh	45 Mbps	JPEG	2	ENDLC	2009	Central CC
Lyons-Lyons/Decatur Northeast	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Macy-Umo n ho n Nation	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Mead	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Newcastle	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
North Bend	45 Mbps	JPEG	2	ENDLC	2009	Metro CC

Oakland-Oakland/Craig	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Omaha-Metropolitan Community College	45 Mbps	JPEG				Metro CC
Pender	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Prague	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Raymond-Raymond Central	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Scribner-Scribner/Snyder	45 Mbps	JPEG	2	ENDLC	2009	Metro CC
South Sioux City	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Tekamah-Tekamah/Herman	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Wahoo	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Wakefield	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Wakefield-ESU 1	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Walthill	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Wayne	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
West Point	45 Mbps	JPEG	2	ENDLC	2009	Northeast CC
Winnebago	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Winside	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Wisner-Wisner/Pilger	45 Mbps	JPEG	2	ENDLC	2009	Metro CC
Wynot	45 Mbps	JPEG	1	ENDLC	2009	Northeast CC
Yutan	45 Mbps	JPEG	2	ENDLC	2009	Southeast CC
Ponca (NO DL)	1.5 Mbps		1			Northeast CC
Lincoln-Bryan Learning Community	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-East H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Lincoln H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-LPSDO	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Northeast H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-North Star H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Southeast H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Southwest H.S.	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Lincoln-Science Focus School	1000 Mbps	H.264	18	LDLC	2014	Southeast CC
Atkinson-West Holt Rural H.S.	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Bartlett-Wheeler Central	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Butte-West Boyd Unified	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Chambers	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Clearwater-NE Unified District 1	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Elgin	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Ewing	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Lynch	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Neligh-ESU 8	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
O'Neill	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Orchard-NE Unified District 1	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Petersburg-Boone Central (nonrenewal?)	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Spencer-West Boyd Unified	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Stuart	45 Mbps	JPEG	8	NVTP	2006	Northeast CC
Ainsworth	45 Mbps	JPEG	17	NCDLC	2008	Northeast CC
Ainsworth-ESU 17	45 Mbps	JPEG	17	NCDLC	2008	Northeast CC
Bassett-Rock County H.S.	45 Mbps	JPEG	17	NCDLC	2008	Northeast CC
Cody-Cody/Kilgore	45 Mbps	JPEG	17	NCDLC	2008	Mid-Plains CC
Springview-Keya Paha	45 Mbps	JPEG	17	NCDLC	2008	Northeast CC
Valentine	45 Mbps	JPEG	17	NCDLC	2008	Mid-Plains CC
Bloomfield	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Creighton	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Niobrara	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Osmond	45 Mbps	JPEG	8	NE.NEDLC	2007	Northeast CC
Plainview	45 Mbps	JPEG	8	NE.NEDLC	2007	Northeast CC
Randolph	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Santee	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Verdigre-NE Unified District 1	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC

Wausa	45 Mbps	JPEG	1	NE.NEDLC	2007	Northeast CC
Albion-*Boone Central (unconsolidating?)*	45 Mbps	JPEG	7	NE. NELA	2007	Central CC
Battle Creek	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Madison	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Neligh-Neligh/Oakdale	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Newman Grove	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Norfolk-Northeast Community College	45 Mbps	JPEG			2007	Northeast CC
Norfolk-Northeast Community College	45 Mbps	JPEG			2007	Northeast CC
Norfolk-Northeast Community College	45 Mbps	JPEG			2007	Northeast CC
Norfolk-Northeast Nebraska Arts Council	45 Mbps	JPEG			2007	Northeast CC
Norfolk	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Pierce	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Stanton	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Tilden-Elkhorn Valley	45 Mbps	JPEG	8	NE. NELA	2007	Northeast CC
Wayne-Wayne State College	45 Mbps	JPEG			2007	
Wayne-Wayne State College	45 Mbps	JPEG			2007	
Ansley	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Arcadia	45 Mbps	MPEG2	10	STEP	2012	Central CC
Broken Bow	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Burwell	45 Mbps	MPEG2	10	STEP	2012	Northeast CC
Dunning	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Loup City	45 Mbps	MPEG2	10	STEP	2012	Central CC
Merna-Anselmo/Merna	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Sargent	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Taylor-Loup County H.S.	45 Mbps	MPEG2	10	STEP	2012	Mid-Plains CC
Adams-Freeman H.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Arlington	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Auburn-ESU 4	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Beatrice	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Beatrice-ESU 5	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Beatrice-Homestead National Monument	100 Mbps	H.264			2011	Southeast CC
Beatrice-Southeast Community College	100 Mbps	H.264			2011	Southeast CC
Bennington	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Blair	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Bruning-Bruning/Davenport H.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Chester-Thayer Central M.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Cook-Nemaha Valley	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Crete	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Davenport-Bruning/Davenport M.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Dawson-Dawson/Verdon	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Daykin-Meridian	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
DeWitt-TriCounty	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Deshler	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Dorchester	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Elkhorn	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Exeter-Exeter/Milligan H.S.	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Fairbury	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Fairmont-Fillmore Central M.S.	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Falls City	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Firth-Norris	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Friend	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Geneva-Fillmore Central H.S.	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Gretna	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Hebron-Thayer Central H.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Henderson-Heartland	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Humboldt-Humboldt/Table Rock/Steinauer	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Johnson-Johnson/Brock	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Lewiston	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC

Lincoln-NDE	100 Mbps	H.264			2011	
Lincoln-Southeast Community College	100 Mbps	H.264			2011	Southeast CC
Louisville	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Malcolm	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
McCool Junction	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Milford	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Milford-ESU 6	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Milford-Southeast Community College	100 Mbps	H.264			2011	Southeast CC
Murdock-Elmwood/Murdock	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Murray-Conestoga	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Nebraska City	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Nebraska City-Visually Impaired	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Odell-Diller/Odell Secondary	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
Omaha-ESU 3	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Omaha-Henry Doorly Zoo	100 Mbps	H.264				Metro CC
Omaha-Millard North	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Omaha-Millard South	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Omaha-Millard West	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Omaha-Westside Dist. 66	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Palmyra	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Pawnee City	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Plattsmouth	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Seward	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Shickley	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Stella-SE Consolidated	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Sterling	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Syracuse-Syracuse/Dunbar/Avoca	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Tecumseh	100 Mbps	H.264	4	SE.NEDLC	2011	Southeast CC
Utica-Centennial	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Valley-Waterloo/Valley	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Waterloo-Waterloo/Valley	100 Mbps	H.264	3	SE.NEDLC	2011	Metro CC
Waverly	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Weeping Water	100 Mbps	H.264	3	SE.NEDLC	2011	Southeast CC
Wilber-Clatonia	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Wymore-Southern H.S.	100 Mbps	H.264	5	SE.NEDLC	2011	Southeast CC
York	100 Mbps	H.264	6	SE.NEDLC	2011	Southeast CC
Auburn (NO DL)	1.5 Mbps		4			Southeast CC
Bellevue East (NO DL)	1.5 Mbps		3			Metro CC
Bellevue West (NO DL)	1.5 Mbps		3			Metro CC
Fort Calhoun (NO DL)	1.5 Mbps		3			Metro CC
Omaha Benson (NO DL)	3.0 Mbps		19			Metro CC
Omaha Bryan (NO DL)	3.0 Mbps		19			Metro CC
Omaha Burke (NO DL)	3.0 Mbps		19			Metro CC
Omaha Central (NO DL)	3.0 Mbps		19			Metro CC
Omaha North (NO DL)	3.0 Mbps		19			Metro CC
Omaha Northwest (NO DL)	3.0 Mbps		19			Metro CC
Omaha South (NO DL)	3.0 Mbps		19			Metro CC
Papillion-LaVista (NO DL)	100 Mbps		3	SE.NEDLC	2009	Metro CC
Papillion-LaVista-South (NO DL)	4.5 Mbps		3			Metro CC
Ralston (NO DL)	100 Mbps		3	SE.NEDLC	2009	Metro CC
Springfield-South Darpy Dist. 46 (NO DL)	1.5 Mbps		3			Metro CC
Arapahoe	45 Mbps	JPEG	11	SW.NEDLC	2006	Central CC
Arnold	45 Mbps	JPEG	10	SW.NEDLC	2006	Mid-Plains CC
Arthur-Arthur County H.S.	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Bartley-Southwest Public Schools	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Benkelman-Dundy County H.S.	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Brady	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Callaway	45 Mbps	JPEG	10	SW.NEDLC	2006	Mid-Plains CC

Cambridge	45 Mbps	JPEG	11	SW.NEDLC	2006	Central CC
Culbertson-Hitchcock Co Unified	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Curtis-Medicine Valley	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Curtis-NE College of Tech Ag	45 Mbps	JPEG				
Eustis-Eustis/Farnam	45 Mbps	JPEG	11	SW.NEDLC	2006	Mid-Plains CC
Grant	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Hayes Center	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Hershey	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Hyannis	45 Mbps	JPEG	16	SW.NEDLC	2006	Western CC
Imperial-Chase County H.S.	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Indianola-Southwest Public Schools	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Madrid-Wheatland	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Maxwell	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Maywood	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
McCook	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
McCook-MidPlainsCC	45 Mbps	JPEG				Mid-Plains CC
McCook-MidPlainsCC	45 Mbps	JPEG				Mid-Plains CC
Mullen	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
North Platte	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
North Platte-ESU 16	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
North Platte-MidPlains CC	45 Mbps	JPEG				Mid-Plains CC
North Platte-MidPlains CC	45 Mbps	JPEG				Mid-Plains CC
North Platte-UN West Central Research	45 Mbps	JPEG				
Ogallala	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Ogallala-ESU 16	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Oxford-Southern Valley	45 Mbps	JPEG	11	SW.NEDLC	2006	Central CC
Paxton-Consolidated	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Stapleton	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Sutherland	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Thedford	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Trenton-ESU 15	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Trenton-Hitchcock Co. Unified	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Tryon-McPherson County H.S.	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Wallace	45 Mbps	JPEG	16	SW.NEDLC	2006	Mid-Plains CC
Wauneta-Wauneta/Palisade	45 Mbps	JPEG	15	SW.NEDLC	2006	Mid-Plains CC
Cedar Rapids	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Elba	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
Clarks-High Plains Community M.S.	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Columbus-ESU 7	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Fullerton	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Greeley-Greeley/Wolbach	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
Scotia-North Loup Scotia	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
Palmer	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Spalding	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
St. Edward	45 Mbps	JPEG	7	TVDEC-N	2009	Central CC
Wolbach-Greeley/Wolbach	45 Mbps	JPEG	10	TVDEC-N	2009	Central CC
Alma	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Amherst	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Axtell	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Bertrand	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Cairo-Centura H.S.	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Cozad	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Elm Creek	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Elwood	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Franklin	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Gibbon	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Gothenburg	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Grand Island (NO DL)	1.5 Mbps		10			Central CC

Grand Island-Central Community College	100 Mbps	H.264				Central CC
Hildreth-Wilcox/Hildreth	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Holdrege	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Holdrege-ESU 11	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Kearney	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Kearney-ESU 10	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Kearney-UN-Kearney	100 Mbps	H.264				
Lexington	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Litchfield	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Loomis	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Minden	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Ord	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Overton	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Pleasanton	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Ravenna	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Shelton	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
St. Paul	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Sumner-Sumner/Eddyville/Miller H.S.	100 Mbps	H.264	10	TVDEC-S	2009	Central CC
Wilcox-Wilcox/Hildreth	100 Mbps	H.264	11	TVDEC-S	2009	Central CC
Grand Island NW (NO DL)	1.5 Mbps		10			Central CC
Wood River (NO DL)	1.5 Mbps		10			Central CC
Alliance	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Bayard	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Bridgeport	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Chadron	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Chadron-Chadron State College	45 Mbps	JPEG				Western CC
Chappell-Creek Valley	45 Mbps	JPEG	14	WNDLC	2009	Western CC
Crawford	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Dalton-Leyton H.S.	45 Mbps	JPEG	14	WNDLC	2009	Western CC
Gering	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Gordon	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Harrisburg-Banner County H.S.	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Harrison-Sioux County H.S.	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Hay Springs	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Hemingford	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Kimball	45 Mbps	JPEG	14	WNDLC	2009	Western CC
Lodgepole-Creek Valley	45 Mbps	JPEG	14	WNDLC	2009	Western CC
Minatare	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Mitchell	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Morrill	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Oshkosh-Garden County H.S.	45 Mbps	JPEG	14	WNDLC	2009	Western CC
Potter-Potter/Dix H.S.	45 Mbps	JPEG	14	WNDLC	2009	Western CC
Rushville	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Scottsbluff	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Scottsbluff-ESU 13	45 Mbps	JPEG	13	WNDLC	2009	Western CC
Scottsbluff-Western NE Community College	45 Mbps	JPEG				Western CC
Sidney-ESU 14	45 Mbps	JPEG	14	WNDLC	2009	Western CC
Sidney (NO DL)	1.5 Mbps		14			Western CC
Big Springs-South Platte H.S. (NO DL)	1.5 Mbps		14			Western CC

Summary Data

Number of H.S. with 45 Mbps JPEG	152	
Number of H.S. with 45 Mbps MPEG2	20	
Number of H.S. with 100 Mbps	97	
Number of H.S. with 1.5-3.0 Mbps	23	
Number of ESUs with 45 Mbps JPEG	11	
Number of ESUs with 45 Mbps MPEG2	1	
Number of ESUs with 100 or 1000 Mbps	6	
Number of Hgher Ed/Informal Ed Sites	26	(17 JPEG, 1 MPEG2, 8 H.264)
	336	

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Lincoln Distance Learning Consortium	LDLC	Kirk Langer	klanger@lps.org
Niobrara Valley TelePartnership	NVTP	Nigel Buss	nbuss@esu8.org
North Central Distance Learning Consortium	NCDLC	Nigel Buss	nbuss@esu8.org
Northeast Nebraska Distance Learning Consortium	NE.NEDLC	Nigel Buss	nbuss@esu8.org
Northeast Nebraska Learners Academy	NE. NELA	Nigel Buss	nbuss@esu8.org
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Southwest Nebraska Distance Learning Consortium	SW.NEDLC	Shirley Schall	sschall@esu15.org
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